INDUSTRIAL EQUIPMENT NEWS

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

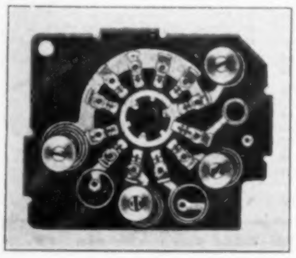
APRIL - 1951
VOL. 19 • NO. 4

Product Information *for specifiers and buyers in all industries*

BREVITY—*Identify by* **IEN - 3251** *if you write the maker*

ELECTRIC CIRCUITS . . Conductor bonded to base in specified outline

Source: FRANKLIN AIRLOOP CORP.
43-22 34th St., Dept. 5, Long Island City 1, N. Y.



New techniques have been added to the company's die-stamping methods, patented in 1946, to apply electric circuits on one or both sides of an insulating sheet or panel in order to eliminate a major portion of the labor required in normal circuit wiring as well as the chance of error in making satisfactory circuit connections by manual means. The company is now prepared to assist in engineering design, to produce the necessary press tools and to make the specified circuit assemblies in quantity.

Manufacture of the circuit starts with a sheet of conducting metal such as tinned, silvered or plain copper, tinned and plain brass, aluminum and silver with an adhesive coating on one side. The sheet is simultaneously blanked and formed into the electric circuit and is staked and bonded to the insulating base by application of heated shearing and forming dies employed in a press.

Basically a series of parallel conductors is applied in one direction on one side of the insulation and at 90 deg. on the opposite side in any required total number of conductors. Interconnection between the conductors on the two sides is by punching through the insulation at selected points and by then joining the conductors by eyelets or pins. Other circuit components such as shields, inductors, capacitors, switch contacts can be positioned automatically or by hand and connected simultaneously with the stamping operation.

Variations of the parallel conductors can be made practically without limit as shown by the view of a front face of an assembled oscillator wafer for an electronic assembly. In this unit four brass plates mounted above spiral inductors are adjustable by screwdriver to vary inductance. A brass ring mounted on a cylindrical tube at the right center of the assembly is one stator of a fine-tuning-control capacitor. The other stator ring is mounted on the rear with a brass slug, controllable from the front, employed to move in and out of the tube for fine tuning control.

Technical booklet, 16 pages, "Mass Production Die Stamping of Wired Circuits," presents an excellent illustrated description of the process including a range of examples showing both simple and complex circuits.

BREVITY—*Identify by* **IEN - 3252** *if you write the maker*

MIRROR . . Made of plastic sheet with vacuum deposited reflector

Source: FLEXMIR PRODUCTS INC.
22-26 Broome St., Newark 3, N. J.

Property details upon request

Lucite and Plexiglas, employed in construction of a new plastic-base mirror, are combined with surface-treating material to make the plastic base resistant to abrasion and scratching. Then a reflecting surface is applied in a metal-depositing vacuum process. The resulting mirror weighs about ⅙ that of a glass mirror of duplicate size. It will not shatter, is shock resistant and pleasant to touch. The surface will not steam or cloud. Application can be made in a temperature range between minus 40 and plus 160 deg. F. Reflectability duplicates that of glass mirrors.

Sizes are to specification with maximum at 60 by 90 inches. Thickness starts at .06 and can be increased to 1 inch. Colors include silver, gold, pastels or any shade in which the plastic material can be provided. The finished mirror can be fabricated in the same manner as ordinary plastic to any size or shape. It can be beveled, drilled, engraved.

WE URGE YOU TO . . .

. . . secure immediately a copy of Regulation 4 of the National Production Authority if you have not already done so. It tells about what you can do now and may not be able to do later to secure valuable repair parts, supplies and equipment to keep your plant running. Contact your nearest office of the U. S. Department of Commerce for the 4-page bulletin dated February 27, "Regulation 4," covering "maintenance, repair and operating supplies and minor capital additions."

BREVITY—*Identify by* **IEN - 3253** *if you write the maker*

PAINTING . . Electrostatic equipment guides paint deposit in spray booths

Source: ASHDEE PRODUCTS INC.
18027-31 Dixie Highway, Homewood, Ill.

Paint-Miser trade names new electronic electrostatic equipment for application with adjustably mounted paint spray guns and accessory equipment, supplied by the user, to attract spray to the surfaces of work moving under a conveyor line in production.

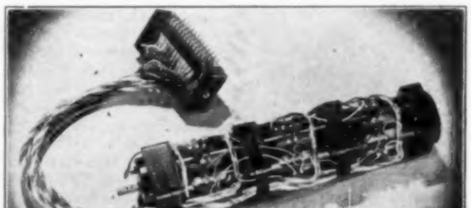
This is accomplished by establishing a potential in the spray as it issues from the paint gun and by grounding the work in an electrostatic field. Paint spray entering this field will coat work surfaces directly in front of it and also will move around to the back to coat those surfaces also.

The electrostatic power unit shown in the illustration is portable and measures 18 by 18 by 48 inches. Peak output is 100 kva. Current is maximum at 4 milliamperes. The power unit connects to a 110-volt, 60-cycle ac. line with input at 500 watts. The company is prepared to supply engineering assistance in setting up a complete installation.

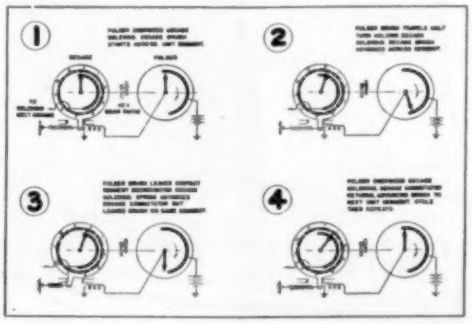
BREVITY—*Identify by* **IEN - 3254** *if you write the maker*

COUNTING .. Electric decade unit, rotary drive, to indicate, control

Source: GENISCO INC.
2231-35 Federal Ave., Los Angeles 64, Calif.



Analog Digital Converter is a new counting device with rotary input drive and an 85-volt dc. electrical input to the internal solenoid assembly. One revolution of the input shaft provides 10 increments of output count. Output is in the form of discrete electrical increments that can be used to energize light-bank indicators or provide incremental actuating circuits to operate recorders and controllers or equipment such as the International Business Machine summary card punch. Repetition of values is assured for given positions of the input shaft within ¼ of the smallest increment of measurement.



Counting, both up and down the scale, is without loss of position by direct external and internal mechanical coupling which is not dependent on pulse count. Sections or decades can be added or subtracted to provide a count from 0 to 9 with one decade or on 0 to 99,999 with five decades. Any number of decades can be specified. Wiring is brought out for multiple-plug connector application. Input torque is 1½ ounce inches. The company is prepared to consult with prospective users on application of the new equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 100 and 101 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

•

From an Electrical Manufacturer

"My experience with IEN has been good. The subject matter is informative and above all, practical. We always check with IEN first when looking for a new or old product."

•

Departments

READER SERVICE FORM — Pages 16-17 and 100-101
To assist you in securing the information you want

SUBJECT INDEX — Page 114
Products and services listed by name and by function

PAPER WORK — Page 4
Opportunity to install "painless" record keeping

NEWS NOTES — Page 24
Reviews of unusually helpful literature and services

NEW LITERATURE — Page 76
Condensed reviews of current manufacturers' catalogs

"I WISH I HAD" — Page 116
Requests we cannot answer, printed in the hope you can

•

Our Selections in This Issue

BATTERY — Page 53
Nickel-cadmium design particularly for diesel starting

COUNTING — Page 92
Predetermining unit, three or four telephone type dials

DEFENSE PRODUCTION — Page 24
Answer booklet to questions on inventory and priorities

ELEVATOR — Page 5
Portable hydraulic unit is controlled on platform

FASTENING — Page 2
Metal toggle clip to lock metal sheets in firm assembly

LIGHTING — Page 33
Luminous ceiling for glare-free adjustable illumination

PROTECTING — Page 8
Chemical material decontaminates radioactive deposits

SIGNALING — Page 72
Hoist protector gives visual-audible overload signal

SWITCH — Page 96
Pressure operated to signal a change in liquid level

TACHOMETER — Page 21
Giant voltmeter, generator actuated to read rpm.

TESTING — Page 81
Dynamometer reads prime-mover torque, ½ to 10 hp.

TESTING — Page 91
Accelerometer records on enclosed magnetic tape

WELDING — Page 39
Hidden-arc equipment applies opposed horizontal heads

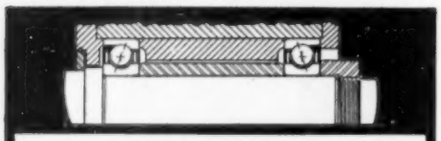
W. E. Irish — *Editor & V. Pres.*
F. Morse Smith — *V. Pres. in Charge*

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

FILL IN AND SEND ALONG TO OTHERS INTERESTED IN PRODUCT INFORMATION

- ☐ *Plant Operating Mr.* ____________
- ☐ *Production Mr.* ____________
- ☐ *Engineering Mr.* ____________
- ☐ *Product Design Mr.* ____________
- ☐ *Purchasing Mr.* ____________
- ☐ ____________

BREVITY—Identify by IEN - 3255 if you write the maker



HELP IN BEARING APPLICATION

From the Industry's Most Complete Library

Behind the successful performance record of New Departure ball bearings, stands a wealth of practical information gained from years of experience and exhaustive laboratory research.

This specialized information forms the most complete engineering library in the industry. Books and booklets on design, maintenance, service, etc., under titles too numerous to list, are available upon request . . . as is personal consultation with New Departure engineers.

Sales and Engineering Offices in All Principal Cities
New Departure · Division of General Motors ·
Bristol, Connecticut

NEW DEPARTURE
BALL BEARINGS

BREVITY—Identify by IEN - 3256 if you write the maker

FREE! 32-PAGE HANDBOOK
SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

HANDBOOK SHOWS HOW

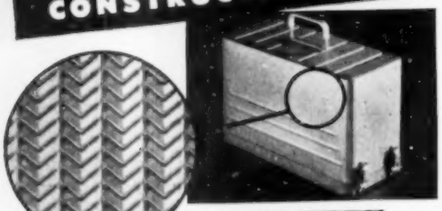
Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.
Technical Coatings Since 1895
Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 3257 if you write the maker

RUGGED, LIGHTWEIGHT CONSTRUCTION WITH—



Actual-Size Photo of Rigidized Metals Pattern 2-HB

Rigidized DESIGN STRENGTHENED **Metals**

This use of Rigidized Metal has added surface protection and strength to the carrying case. Patterns designed primarily for strength permit use of a lighter gauge metal. This gives you more units per lb. of metal. Fingerprints, scratches and dents are not noticeable on a Rigidized surface. It will pay you to investigate Rigidized Metals in relation to your products.

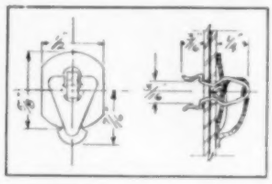
Send for RIGIDIZED METALS IDEA HANDBOOK TODAY

Rigidized Metals Corporation
664 OHIO STREET, BUFFALO, N. Y.

BREVITY—Identify by IEN - 3258 if you write the maker

FASTENING . . Metal toggle clip to lock metal sheets in firm assembly

Source: AMERICAN SHOWER DOOR CO.
1026-30 La Brea Ave., Los Angeles 38, Calif.



Thumweld trade names new metal toggle clip consisting of a finger piece, a pressure plate, a "hair pin" and a formed spreader element. Formed shoulders on the pin lie together in retracted position so it can be entered through a hole when the finger piece is up at right angles to the surface of the sheets. Hinging the finger piece down causes it to ride on the pressure plate and push the wedge down also. This results in spreading the pin legs so its shoulders grip back of the sheets to hold them.

Application is from one side. The unit enters a $\frac{3}{16}$-in. hole. Thumb pressure alone will move the finger piece down into locked position. A screwdriver can be inserted to release it. The fastener is available in a range of sizes to enter holes between ⅛ and ½ in. and for metal thickness to ½ inch. Its parts are made of steel.

BREVITY—Identify by IEN - 3259 if you write the maker

METAL . . Gallium in commercially pure form for research

Source: ALUMINUM CO. OF AMERICA
670 Dept. 1, Gulf Bldg., Pittsburgh 19, Pa.

It may pay you to investigate

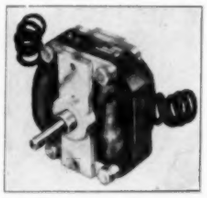
The company announces availability of the metallic element gallium as a by-product of the manufacture of aluminum from bauxite ore. A pocket booklet has been prepared on the subject and is available upon request under the title "Alcoa Gallium."

The metal melts at body temperature but will not boil until it is heated to about 3,600 deg. F. It "wets" the surface of many materials, can be painted on glass to make a brilliant mirror. It expands when it solidifies. Atomic weight is 69.72.

BREVITY—Identify by IEN - 3260 if you write the maker

MOTOR . . Shaded pole, 60 cycle ac., rates 1/80 hp. on continuous duty

Source: ELECTRIC MOTOR CORP.
State & Marquette Sts., Racine, Wis.



New brackets carrying the bearings in this Model-800D 4-pole skeleton motor provide rigidity and accurate alignment for built-in application in equipment such as fans, heating units, dictating machines, coolers, laboratory apparatus. The motor operates at 1,600 rpm. free, 1,450 rpm. on rated load. It can be equipped with reduction gearing to specification. Bearings are porous bronze with reservoirs, or ball design, factory lubricated and sealed.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3261 if you write the maker

JUST 7 INCHES HIGH

THE DUFF-NORTON
"Shorty" JACK
LIFTS HEAVY LOADS IN LOW HEIGHTS

Yes . . . the new "Shorty" Jack is just 7" high and weighs only 22 lbs.—yet it will lift heavy loads weighing up to 15 tons. Note the low height application at left in which 3 jacks were used.

Write today for Bulletin AD-12-G.

THE DUFF-NORTON MANUFACTURING CO.
Main Plant and General Offices: PITTSBURGH 30, PA. Canadian Plant: TORONTO, ONT.
"The House that Jacks Built"

BREVITY—Identify by IEN - 3262 if you write the maker

Atlas 7" SHAPER

On any shaping job within a 7" stroke, the low-cost Atlas shaper is a time-saver and money-maker. It's so easy to set-up, so inexpensive to operate, and so dependably accurate that oversize equipment can't match it for efficiency and economy!

If your production includes small parts, you'll find hundreds of cost-cutting uses for one or more Atlas 7" Shapers in your plant — production lines, tool room, and maintenance. It has a wide work range — 45 to 186 strokes per minute, and cutting speeds of 3½ to 116 fpm. Timken Tapered Roller Bearings, crank type ram drive, extra-heavy construction, V-belt drive. Send for catalog.

ATLAS PRESS CO.
4801 N. Pitner St., Kalamazoo, Mich.

MATCHED PRECISION TOOLS FOR WOODWORKING AND METALWORKING

BREVITY—Identify by IEN - 3263 if you write the maker

Smothered

Fire is quickly smothered by a blanket of CO_2 . . . when you pull the trigger of a *Kidde* portable extinguisher. Easy to operate . . . no annual recharge necessary. Write for free literature.

Walter Kidde & Company, Inc.
436 Main St., Belleville 9, N. J.

Kidde

BREVITY—Identify by IEN - 3264 if you write the maker

HERE'S THE MAN to give you expert brazing service

He's the Handy & Harman field service engineer. He has a wide background of experience with both normal and war time production. He's an artist with a torch. He loves brazing problems — and if he can't lick them on the spot, he's backed by the top-ranking and most experienced Research and Engineering staffs in the business — originators of the well known low-temperature silver brazing alloys, EASY-FLO and SIL-FOS. He's ready — to demonstrate silver alloy brazing — to show you where and how it can benefit you — to help you design for it and apply it to best advantage — to sample braze your parts — to assist in training your operators. He's at your service anytime without cost or obligation. Just call or write our nearest office and say when you want him to call.

HERE'S THE BULLETIN to give you full facts . . .

Gives the whole remarkable EASY-FLO and SIL-FOS brazing story, plus useful information on joint design and fast heating and production methods. Write today for a copy of Bulletin 20.

HANDY & HARMAN 82 Fulton St. New York 38, N. Y.

BREVITY—Identify by IEN - 3265 If you write the maker

Make this booklet your First thought for Special Metals

Need a "special" metal for a tough application? Reach for this INCO Special Problems book. It shows alloys that hold high strength from 2200°F. to sub-zero . . . offer excellent ductility, hardness, or toughness . . . are strongly resistant to oxidation and corrosion from acids, alkalies, oxygen and other gases, and salts.

You'll find this booklet valuable in specifying metals. It gives technical data on twelve "standard" alloys that cover many "problem" applications, with photos to indicate the scope of demands met by the INCO Nickel Alloys.

Send for your free copy . . . just check the IEN reply card.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

BREVITY—Identify by IEN - 3266 If you write the maker

it's TOUGH! it's dependable

Securityflex PORTABLE CORD

Securityflex* keeps equipment running. Takes abuse, resists kinking, flexes indefinitely. Resists oil, water, abrasion, age, ozone.

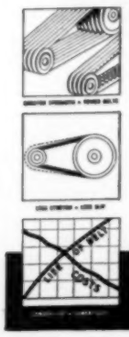
Insist on Securityflex Portable Cord for your equipment. So rugged it's used on mine drills. It's the right cord for your job. Made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 3267 If you write the maker

BROWNING STEEL CABLE GRIPBELTS

MORE *Strength* • LESS *Stretch*



Browning Steel Cable Gripbelts are much stronger than ordinary belts. They will safely carry heavier loads with fewer belts. They will stretch less and give longer life without loss of power and efficiency.

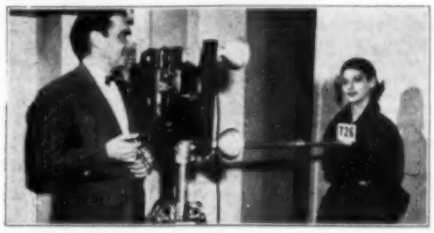
Write FOR LIST PRICE SHEET V-143-A

BROWNING MANUFACTURING CO.
INCORPORATED
MAYSVILLE, KENTUCKY

BREVITY—Identify by IEN - 3268 If you write the maker

PHOTOGRAPHING . . Camera assembly takes employee identification pictures

Source: POLAROID CORP.
207-11 Massachusetts Ave., Cambridge 39, Mass.



New tripod assembly can be set up in any convenient location in a plant to take employee identification pictures at the rate of 1,200 per day. The assembly employs the company's Land camera which exposes and also develops the picture within the camera itself in a one-minute interval. No dark room, tanks or developing liquids are required.

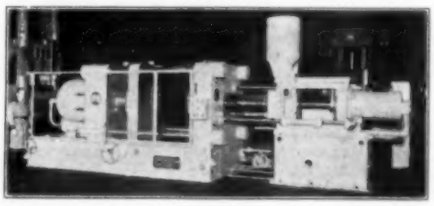
Each exposure records two pictures of the same subject side by side through the action of a field-splitting attachment. In addition a two-position lens mounting permits two of the duplex exposures on each 3¼ by 4¼-in. section of the eight-part roll. Thus each loading of the camera will produce two pictures, one for the employee and one for a record of 16 employees.

Mounting is on a tripod with reflector flood lamps and a telescopic position bar to place the subject at correct distance from the camera. The bar carries a holder for an identification number or name to appear with the picture. Timing requires no operator attention. The equipment, including the tripod, packs into two carrying cases. Weight is 40 pounds.

BREVITY—Identify by IEN - 3269 If you write the maker

PLASTIC MOLDING . . Hydraulic press rates 60 ounces, converts to 200 ounces

Source: HYDRAULIC PRESS MFG. CO.
301 Lincoln Ave., Mount Gilead, Ohio

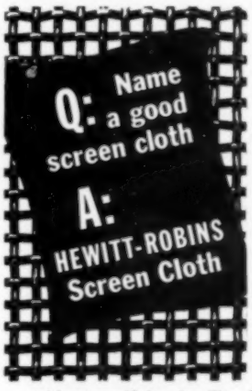


Mold clamp and injection unit are separate assemblies in this new Model 60-A hydraulic injection-molding machine. The assembly mounts the hydraulic equipment outside of the base for accessibility. Electrical controls are in a panel cabinet. Clamping pressure is rated at 1,000 ton. Clamping stroke is maximum at 36 inches. Platen dimensions are 60 by 40 in. with maximum opening at 60 inches.

Installation can be made on a plant floor. No pit or operator's platform required. The two-part design permits conversion between 60 and 200-oz. capacities by installing a 200-oz. pre-plasticizing conversion unit and retaining the hydraulic clamping and power unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3270 If you write the maker



BECAUSE you increase the time between screen cloth changes—on *any make* of screen!

BECAUSE Hewitt-Robins Screen Cloth is made of Super-Gyraloy, the specially blended alloy steel wire that's the toughest, hardest screening surface ever developed.

BECAUSE Hewitt-Robins Super-Gyraloy Screen Cloth comes in the *weave* you want . . . the *size opening* you need.

BECAUSE its heat treatment and microstructure make Super-Gyraloy highly resistant to abrasion without sacrificing ductility. You can actually bend a wire of this cloth around its own diameter without fracture.

SEND TODAY for Bulletin No. 113-A. Fully describes Hewitt-Robins Super-Gyraloy Screen Cloth, 3/16" to 6" openings, made from #12 gauge wire to 5/8" rod in square and rectangular openings, flat top and non-blind weaves. Also in Gyraloy (spring steel) stainless steel, Monel metal, brass or enamel coated in any standard diameter of wire. Robins Conveyors Division, 270 Passaic Ave., Passaic, N. J.

HEWITT-ROBINS SCREEN CLOTH

BREVITY—Identify by IEN - 3271 If you write the maker

LUBRICATION ECONOMY

"LUBRIPLATE No. 630-AA is Practically a Universal Lubricant"

The Spokane Portland Cement Company of Irvin, Washington, writes "With the introduction of LUBRIPLATE No. 630-AA we reduced the number of lubricants we were using from ten to two. LUBRIPLATE No. 630-AA might almost be considered a UNIVERSAL LUBRICANT."

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

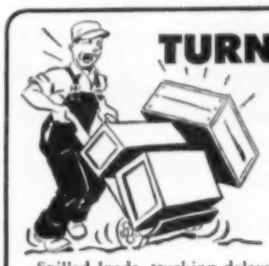
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fisher Brothers Refining Co.
Newark 5, N. J. Toledo 3, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

BREVITY—Identify by IEN - 3272 If you write the maker



TURNOVER LIKE THIS COSTS YOU MONEY!

Spilled loads, trucking delays, underfoot hazards are costly. There's no substitute for a *real* heavy-duty floor—and that means concrete, *good* concrete.

Rebuild worn-out floors over week-end (no plant tie-up) with 'Incor' 24-Hour Cement—ready to use in 24 hours, saves a week or more. Faster thorough 'Incor'* curing means stronger, longer-lasting floors.

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Albany • Bethlehem, Pa. • Birmingham • Boston • Chicago • Dallas • Houston • Indianapolis • Jackson, Miss. • Kansas City, Mo. • New Orleans • New York • Norfolk • Philadelphia • Richmond • Roanoke • St. Louis • Washington, D. C.

BREVITY—Identify by IEN - 3273 If you write the maker

300 Bends Per Hour with NEW Semi-Automatic PINES BENDING MACHINE

SAVES TIME, CUTS COSTS ON SHORT RUN, PRODUCTION, MAINTENANCE WORK

SPECIFICATIONS
PINES SERIES 1400 BENDER
- Maximum Capacity—1" O.D. 16 ga. mod tube.
- Maximum Radius of Bend—8½" to centerline.
- Length of Tubes—Up to 5 ft. standard.
- Bending Speed—29 R.P.M.
- Working Height—35".
- Overall Size (Floor Space)—3' x 7'.
- Pressure—1000 P.S.I.
- Pump Motor—3 H.P.
- Pump—7 G.P.M. (Vickers).
- Optional—Adjustable gages . . . provision for any length of tube, mandrel for critical bends.

Fast, Easy to Operate—Forms Smooth, Neat Bends Quickly

Eliminates many slow, tedious hand bending operations. Is especially designed to cut costs on work formerly considered too variable for fully automatic equipment. Fast and easy for one man to operate. Hydraulic bending arm forms smooth, neat-looking bends quickly. Clamp and die rollers (for sliding dies) are operated by hand toggle levers. Hand wheel provides immediate angle-of-bend selection. *Typical production:* 300 bends per hour on 1"-16 gage steel tube.

Ask for An Analysis of Your Bending Problems

Write today for free literature. Find out how a Pines Bender can be applied to your work. *Ask for an analysis of your bending problems.* There's no obligation.

PINES ENGINEERING CO. Inc.
635 WALNUT AURORA, ILLINOIS

BREVITY—Identify by IEN - 3274 if you write the maker

You can have "3 Keys!"

Our book "3 Keys to Satisfaction" is 72 pages of facts and figures of significance to designing engineers. It sets out the vital relationship between good design, good steel and good treatment, and shows how to get a specified service from a part at least cost.

There is a copy for you—it is worth sending for—and free on request.

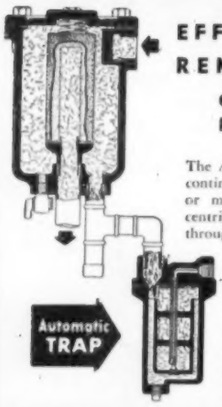
This booklet sent to you FREE

Climax Molybdenum Company
500 Fifth Avenue · New York City

F25

BREVITY—Identify by IEN - 3275 if you write the maker

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 3276 if you write the maker

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors—no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy. Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
1021 E. SPRING STREET · CHIPPEWA FALLS, WIS.

INDUSTRIAL EQUIPMENT NEWS

CEA · The Original IEN Founded 1922 · NBP

Publisher . . . . . Thomas Publishing Company
Vice-President in Charge . . . . . F. Morse Smith
Editor and Vice-President . . . . . W. E. Irish
Managing Editor . . . . . J. W. Moss
Circulation and Reader Service Mgr. . . A. J. Granick
Production Manager . . . . . R. B. Cohen

Editorial Assistants
M. L. Welsh; A. J. Willis

Circulation and Reader Service Assistants
S. Dragon; V. Puzzio

Business Department Assistants
H. Benjamin; R. Irish; B. Sullivan

These are our local offices:		Telephone
Atlanta (6)	3 Villa Dr. N. E.	VErnon 2969
Boston (8)	50 Beacon Street	LAfayette 3-4688
Chicago (4)	20 West Jackson Blvd.	Harrison 7-3730
Cleveland (14)	3145 Superior Ave.	Cherry 1-6582
Detroit (2)	746 Collingwood Ave.	TOwnsend 8-2680
Indianapolis (19)	973 N. Sheridan Ave.	Blackstone 0293
Los Angeles (15)	1200 Rives-Strong Bldg.	Vandike 8921
New York (1)	461 Eighth Avenue	LOngacre 3-1546
Philadelphia	P.O. Box 96, Upper Darby	GRanite 2-6500
Pittsburgh (22)	2101-2 Farmers Bank Bldg.	EXpress 1-0244-5
Toronto (1)	137 Wellington St., W.	ELgin 1421-2-3

This Issue 67,500 Copies
Printed by Charles Francis Press, New York

Industrial Equipment News acts solely in a news reporting capacity for data supplied to it on new industrial developments.

Copyright 1951 by Thomas Publishing Company
461 Eighth Avenue, New York 1, N. Y.

What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 APRIL, 1951 No. 4

Paper Work

We know a master mechanic, one of the best in the business. He could be the best without reservation but for one little thing. He hates all forms of paper work. He calls it pencil pushing, counts it a complete waste of time in his book. He will have no more of it than the company regulations strictly require. We suspect he bears a marked resemblance in this stand to a good many first class plant men.

This particular master mechanic heads a sizable organization, near a hundred men. The power plant supplying steam, compressed air, hydraulic pressure, is his responsibility. The oilers and the equipment repair men, the electricians, pipefitters, carpenters, riggers, laborers, plant police, all operate at his direction.

His headquarters are in a plant office where he has a young fellow who acts as clerk to receive telephone calls, keep records of a sort, relay his instructions to the gang leaders. He spends little time there, is instead at one job or another through the plant counseling, instructing, taking an active hand in particularly difficult cases, searching the plant equipment for opportunity to make suggestions to the department heads.

He maintains contact by telephone with his own office, calling in to bring himself up to the minute on demand for his services, giving instructions for additions to the scheduled work, directing requisitions to the purchasing department or stock room or tool room.

He is liked by the men directing the production departments. He is respected for the friendly and helpful way he handles his work. He can move anything with two ends even though he did not have the opportunity of a college education. Periodically he gets into trouble, just as do the other department heads who find no time or inclination to "put it in writing."

Don't blame him. It is not his fault. He is concerned in mending things that break and in preventing breakdown, not in pencil pushing. No one has "sold" him that a written suggestion to handle equipment in certain ways will go many times further in the right direction than will an oral warning.

No one has taken the time or trouble to discover that for him and for thousands of experienced and responsible men like him the very thought of writing things presents an almost impossible task. No one has tried to understand the marked difference between saying something and having to put it in writing.

It is not our practice to comment here on items we have described in Industrial Equipment News. In this case, however, we make an exception. Just suppose that this master mechanic's plant were to install the new dictating telephones that we talked about in IEN-1102-51. Let's assume they are placed in each plant office where paper-work facilities are at a minimum. They would be set up to take any "talk," of record value, from the production men or the master mechanic.

The orders and instructions and comments could go through as they do now. The working habits of the pencil-shy department heads would require no major change to obtain a complete record for distribution to everyone interested. The young lady at the transcribing center could be the key to the whole plant's paper work.

W. E. Irish.

BREVITY—Identify by IEN - 3277 if you write the maker

HIGH EFFICIENCY
DUST CONTROL
with DUCLONE COLLECTORS

- Because each DUCLONE COLLECTOR is tailor-made for specific use . . . in proper balance—in shape, size of clone and vortex—in relation to air velocity.
- Because scientifically designed and built to eliminate all destructive eddy currents and resistance to centrifugal action.
- Because only DUCLONE is equipped with inlet control and adjustable vortex shield to give highest performance efficiency.
- Expertly engineered . . . simple and sturdy construction . . . assure long, continuous, heavy duty service.
- *A DUCON engineer will gladly confer with you on any dust problem.*

Write for descriptive, illustrated catalog DC49-1.

The DUCON Co.
MINEOLA, N. Y.

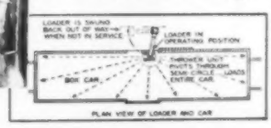
BREVITY—Identify by IEN - 3278 if you write the maker

S-A
SWIVELOADER

Loads Bulk Materials Into Box Cars

(1) Faster (2) Easier
(3) At Low Cost

Powerful centrifugal thrower unit handles dry materials up to 2" size. One man operates loader without entering car. Eliminates hand trimming!



Write for BULLETIN No. 1046

231 Ridgeway Ave.
Aurora, Ill.

Los Angeles, Calif.
Belleville, Ont.

STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings · Saus Speed Reducers

BREVITY—Identify by IEN - 3279 if you write the maker

6 REASONS why American industry specifies WIGGINS

- ★ Craftsmanship
- ★ Integrity
- ★ Uniformity
- ★ Low pressure drop
- ★ Leak proof seal
- ★ Engineering Service

Over many years, Inst-O-Matic has acquired a value for above its mere mechanical qualities, a value proved by its acceptance throughout industry and in all branches of the armed services.

EQUIPMENT MANUFACTURERS

Users' experiences prove conclusively that this design stands up longer under extreme pressure and vibration, and rarely requires replacement. Inquire today.

Basic Sizes; ¼", ½", ¾"; intermediate sizes where needed. Unconditionally guaranteed leak proof from zero to maximum recommended pressure.

Wiggins

INST-O-MATIC COUPLINGS

For proof of performance, write for name of nearest representative to E. B. WIGGINS OIL TOOL CO., INC., 3424 E. Olympic Blvd., Los Angeles 23, Calif.

BREVITY—Identify by IEN - 3280 If you write the maker

YOU ASK FOR IT...

HERE IT IS!

A BETTER COUPLING

LOVEJOY L-R FLEXIBLE COUPLINGS

You wanted a better coupling . . . one that would correct greater misalignments—absorb vibration, shock, backlash and surge. You wanted one that would not cause wear on shafts and bearings and yet required no lubrication. You wanted a coupling that would not require a shutdown for changing cushions . . . one that would give you long, trouble-free service. Well, now you get all this and more with Lovejoy Flexible Couplings. Cushions are available for every duty . . . 1/6 to 2500 H. P. Lovejoy Flexible Couplings were designed for YOU . . . to give you better coupling service. Be sure to use them on your equipment.

Write for catalog and Quick-Finding Selector Charts.

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake St., Chicago 44, Illinois

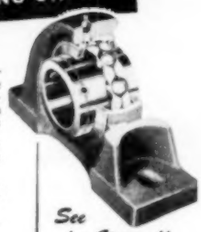
Also Mfrs. Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions.

BREVITY—Identify by IEN - 3281 If you write the maker

GET SERVICE

with

SEALMASTER
BALL BEARING UNITS



Machines run longer smoother—*with less maintenance*—when they're equipped with SealMaster Ball Bearing Units. This exclusive combination of money-saving features tells why:

- **PERMANENTLY SEALED** to exclude dirt and retain grease over long periods.
- **SELF-ALIGNING** in any direction without seal distortion yet no outer race rotation in housing.
- **PRE-LUBRICATED** at the factory—ready for use in your plant

SEALMASTERS are available in Pillow Blocks, Flange Units, Hanger Units, Cartridge Units, Flange-Cartridge Units and Take-Up Units.

Write for CATALOG 845 which lists dimensions and load ratings on the complete SealMaster line.

See for Yourself
Why SEALMASTERS Excel:
SEALMASTERS are designed to give satisfactory service, operate quietly and require minimum attention over long periods. get complete data from catalog 845

BEARING DIVISION
STEPHEN S-ADAMSON Mfg. Co.
231 Ridgeway Ave., Aurora, Ill. / Los Angeles, Calif. • Bellville, Ont.

Factory Representatives and Dealers in All Principal Cities

BREVITY—Identify by IEN - 3282 If you write the maker

22-YEAR RUN IN PRINTING PLANT
... and Still Going Strong!

PABCO MASTIPAVE

AMERICA'S No. 1 LOW-COST LONG-LIFE FLOOR COVERING

"The Mastipave laid in our San Francisco Plant in 1927 is still in excellent condition after twenty-two years of constant service," says Frank T. Sheedy, Production Manager, Stecher-Traung Lithograph Corporation, nationally-known printing firm. "It has successfully withstood light trucking in the aisles, and chemicals and acids in the photo rooms. We do not know of any other material we could have used that would have withstood such use and still be in its excellent condition."

EVERY BUILDING NEEDS PABCO MASTIPAVE

For 25 years, the Nation's blue chip industries, public carriers, hospitals, public school systems have demonstrated that Pabco Mastipave—both regular and non-slip Grip-Tread types—costs little, looks good, wears even better! Grip-Tread Mastipave is sold in roll goods only; regular Mastipave in roll goods and tiles.

SEND NOW FOR THE FULL STORY OF MASTIPAVE

PABCO

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)

GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

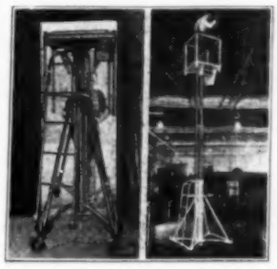
NAME _____ CITY _____

ADDRESS _____ STATE _____

BREVITY—Identify by IEN - 3283 If you write the maker

ELEVATOR . . Portable hydraulic unit is controlled by operator on platform

Source: SAFWAY STEEL PRODUCTS INC.
6234 W. State St., Milwaukee 13, Wis.



An operator standing on the platform of this new Moto-Lift portable elevator can step on a foot switch to raise the platform to a maximum of 17 ft. above the floor from retracted height of 7 ft. in a 25 second interval. He can lower the platform at controlled speed of 1 ft. per sec. by releasing the hydraulic pressure in the line. A telescopic safety tube beside the main piston takes over in the event that hydraulic pressure fails for any reason to provide for safe gradual descent.

Load capacity on the platform is 400 pounds. Weight of the assembly is 600 pounds. The motor-driven pump supplying the hydraulic pressure is assembled beneath the platform with a 6-volt automotive-type storage battery supplying power to drive the motor. A battery rated at 110-amp. hr. will raise the platform 45 times before recharging is required.

Assembly is on a base measuring 51 by 51 inches. It is equipped with four swivel casters on each of which is a brake that can be set against wheel or caster rotation. The base can be drawn together at two sides by telescoping the horizontal spacing tubes to a width of 30 in. that will pass through a doorway. At the same time the 33-in. guard rail surrounding the platform can be dropped down through its corner sockets so the unit will pass through a 7-ft. doorway.

BREVITY—Identify by IEN - 3284 If you write the maker

WELDING . . Automatic arc machine for plate work and tanks to 18 ft. length

Source: CECIL C. PECK CO.
4612-16 Prospect Ave., Cleveland 3, Ohio

New arc welder assembles an air-operated work-clamping horn and head with the necessary controls and a track on which is positioned a Lincolnweld automatic arc-welding head and associated equipment to apply the company's hidden-arc welding procedure. The machine will take cylinders and other hollow shapes with minimum diameter at 12 inches. Its standard 18-ft. work length can be extended to specification for given requirements.

Thickness range is between 14 gage and ¼ inch. In addition to the hidden-arc welding work, in which flux is fed to surround the automatically-advanced electrode, the machine is suited for automatic brazing and for inert-gas shielded-arc welding on stainless steel and non-ferrous metals.

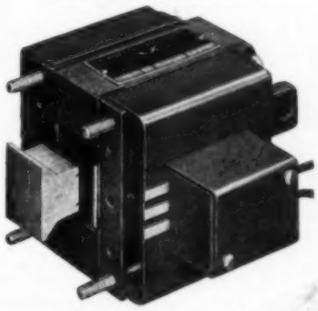
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 3285 If you write the maker

TROMBETTA SOLENOID CORP.
MILWAUKEE WISCONSIN
U.S.A.

FOREMOST SOLENOID MANUFACTURERS IN THE WORLD

CAN FURNISH SOLENOIDS FOR ANY APPLICATION CONCEIVABLE



F-326 PULL TYPE SOLENOID
10 lbs. at 85%; 14 lbs. at 100% voltage and 1½" stroke.

THE F-30 LINE OF SOLENOIDS IS THE RESULT OF 26 YEARS OF CONTINUOUS DEVELOPMENT, IMPROVEMENT AND EXPERIENCE.

BREVITY—Identify by IEN - 3286 If you write the maker

Economical Heat

for
- Preheating Fuel Oil
- Superheating Steam
- Heating Compressed Air

CHROMALOX
Electric
CIRCULATION HEATERS

DEPENDABLE, EFFICIENT, EASY-TO-USE

Production costs go down . . . operating efficiency up, when you install CHROMALOX Electric Circulation Heaters. They give you measured quantities of heat at temperatures up to 750° F that can be rapidly reached and accurately controlled. Dependable, around-the-clock operation with minimum maintenance. Wide selection to meet your specific heat requirements.

FOR MORE KNOW HOW

Write for Catalog 50 that tells the full story.

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Electric Heaters Advertisement, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 3287 If you write the maker

With R-B* Special Retainer Plates

You Get

Faster Die Assembly... *Closer* Hole Spacing

Here's a way to gain all the advantages of R-B interchangeable punches and dies plus additional savings in time and money on die construction. R-B special retainer plates, made to your specifications, eliminate mounting individual retainers—ball retainer locks are built into the plate—thus are ideal for piercing parts with holes too close to permit separate retainers.

R-B special retainer plates are also particularly suited for progressive dies. They can be made in matched units for various punching stations, giving extreme accuracy. The punches or dies are interchangeable, enabling quick changes without time-consuming dis-assembly.

*Richard Brothers

Get the whole story in this 48-page Free Catalog

ALLIED PRODUCTS CORPORATION
RICHARD BROTHERS DIVISION
Department 54 • 12615 Burt Road • Detroit 23, Mich.

Also Produced in Allied's Four Plants . . . HARDENED AND PRECISION GROUND PARTS • STANDARD CAP SCREWS • SPECIAL COLD FORGED PARTS • SHEET METAL DIES • ALLITE DIES CAST OF ZINC ALLOY • JIGS • FIXTURES •

BREVITY—Identify by IEN - 3288 If you write the maker

What's It Worth to You

ALLIS-CHALMERS *Electronic* **Metal Detectors**

to stop stray metal particles like this from reaching your customer.

IT'S A FULL TIME JOB to keep stray metal out of your product. A hairpin, piece from a cutter blade, stray bolt, or a steel sliver can lie hidden away during processing — move into the package — and no one but the consumer will know . . . and then it's too late.

Allis-Chalmers electronic Metal Detector not only spots magnetic metal, but catches non-magnetic metal too, no matter how deeply buried. Particles as small as .047 in. diameter are spotted.

Send for interesting 20 page booklet 7217. It contains 15 schematic diagrams, 11 installation views showing ways of getting protection from stray metal with Allis-Chalmers Electronic Metal Detector.

A-3197

Allis-Chalmers
Milwaukee 1, Wis.

ALLIS-CHALMERS

BREVITY—Identify by IEN - 3289 If you write the maker

METZGAR FLOOR —TO— FLOOR "Power Helper"

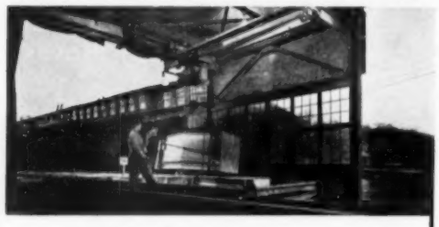
More Efficient Than an Elevator— Cost $3,044 LESS

WRITE— for Suggestion. Give height, floor to floor and horizontal space available—Also maximum unit load.

- Saves on Maintenance
- Costs Less to Operate
- 500% Faster Loading and Unloading Trucks
- Safer to Operate
- More Flexible in Use

METZGAR CO.
417 Douglas, N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 3290 If you write the maker



This Simple
AMERICAN MONORAIL SYSTEM Saves $12,800 Annually in Handling Costs

A saving of 64 man-hours per day (2 shifts) resulted when this unique, simple American MonoRail Overhead Handling System was installed. The entire cost was less than $10,000—so the system paid for itself in less than a year.

You, too, can profit by American MonoRail Overhead Handling. Just drop us a note—we'll be glad to discuss your problem. No obligation, of course.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 3291 If you write the maker

NEW SLIDE CHART

on *Carpenter* Stainless Steels

gives you information to help you select the proper Stainless for

Drawing	Machining
Forging	Riveting
Heading	Roll Forming, etc.

This new Carpenter chart also contains valuable data on the physical constants of many Stainless grades. For your copy, just return the coupon.

THE CARPENTER STEEL COMPANY
151 W. Bern St., Reading, Pa.

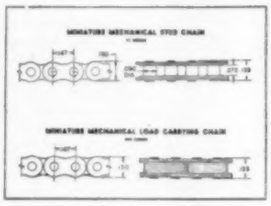
Please send me a copy of the new Carpenter Stainless Slide Chart.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 3292 If you write the maker

DRIVE . . Stud and block chains, stainless steel or beryllium copper

Source: SIERRA ENGINEERING CO.
11723 Mississippi Ave., Los Angeles 25, Calif.



New disconnect-pin assembly has been developed for use with the company's line of stud and block chains, previously described IEN-285-50, to permit quick connection and disconnection of the chain in service. As in the initial design, the pitch measures .147 in. in each assembly for drive and for control.

The stud chain will operate over a 7-tooth sprocket. The block chain rolls freely over a $\frac{3}{16}$-in. pulley. Yield strength is 100 and 310 lbs. in the stud and block designs respectively, when made of stainless steel. It is 80 and 290 lbs. when made of beryllium copper.

Bulletin, "Miniature Mechanical Chains," 4 pages. Dimension data, design information, sprocket tabulation.

BREVITY—Identify by IEN - 3293 If you write the maker

WATER TREATING . . Liquid material to stop foaming in a steam boiler

Source: BIRD-ARCHER CO.
400 Madison Ave., Room 2000, New York 17, N. Y.

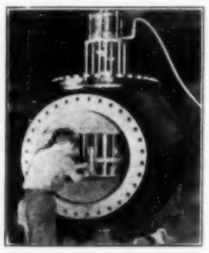
Helps to inhibit feedline deposit

Concentrol is a new surface-active agent supplied in the form of a liquid for addition to the feed water for a steam boiler. It produces rapid change in surface tension in the steam bubbles to result in an unstable film which breaks upon reaching the steam-disengaging surface of the boiler water. The liquid is available in several formulations for given conditions. The company will advise on application.

BREVITY—Identify by IEN - 3294 If you write the maker

VALVE . . Air operated angle unit for 36 in. line in plant making oxygen

Source: KIELEY & MUELLER INC.
2029 43rd St., North Bergen, N. J.



Opening and closing movement are each within one second in this new control valve in which a pneumatic cylinder is connected to the valve stem and the action is on ball-bearing guide bars. The valve assembles in a 36-in. line in a plant that produces oxygen in large quantities. It operates in horizontal position with reference to the guide bars. It is representative of similar equipment the company can produce.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3295 If you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO M *and* M RAIL CLAMPS

For car stops, on loading platforms, temporary sidings, cars on grades, and traveling cranes . . . Used and recommended by leading Steel Companies, Manufacturing Plants, Mines, Grain Elevators, Cement Plants and Quarries.

Write for Bulletin F-41

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 3296 If you write the maker

New! di-acro BOX FINGER BRAKE

Four models 6" 12" 18" 24"
Capacity—16 Gauge Steel

3 TOOLS IN ONE
1 BOX and PAN BRAKE
2 STANDARD BRAKE
3 BAR FOLDER

One box or 10,000—can be economically produced with the versatile new Di-Acro Box Finger Brake. Serves perfectly for all standard brake operations—an Acute Angle Bar converts the brake to a bar folder for locks, seams, hems and sharp angles. The unique Di-Acro Open End Finger forms square or triangular tubes and other similar parts. The Box Finger Bar can be easily mounted on all standard Di-Acro Brakes.

Send for 40 PAGE CATALOG describing DI-ACRO Shears, Punches, Benders, Brakes, Notchers and Rod Forters—also Power Shears and Benders.

Di-Acro is pronounced "DIE-ACK-RO"

O'NEIL-IRWIN MFG. CO.
318 EIGHTH AVENUE, LAKE CITY, MINN.

BREVITY—Identify by IEN - 3297 If you write the maker

Oxweld

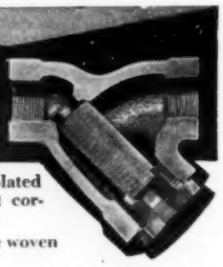
PORTABLE FLAME-CUTTING MACHINES FILL A VARIETY OF SHOP REQUIREMENTS

This Oxweld CM-16 is designed for oxy-acetylene flame-cutting of steel plate up to 4 inches thick. It travels directly on the work and cuts circles automatically—hand-guided, it cuts irregular shapes. Operated on track this machine cuts straight lines. Adaptors are available for straight-line cutting on thick steel or for beveling. The CM-16 weighs only 45 pounds and is low in price. Write for catalog, Form 4487.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

BREVITY—Identify by IEN - 3298 If you write the maker

A Better STRAINER



- *BODY*—is cadmium-plated for protection against corrosion.
- *SCREEN*—High-grade woven monel wire basket.
- *SCREENCAP*—Easily removed. Machined face and spark-plug-type gasket provide tight joint. Cap and screen come out together. Screen automatically aligns when replaced.
- *SIX SIZES.* ½" to 2", for pressures up to 600 lbs. Reasonably priced.

- Many Thousands in Service
- Sold by nearly 150 Mill Supply Houses

See Your Supply House or Send for Bulletin S-201

YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY STRAINERS

BREVITY—Identify by IEN - 3299 If you write the maker

STAYNEW PIPE LINE FILTERS

ELIMINATE MOISTURE OIL DIRT PIPE SCALE

Tests prove that Staynew Filters often save their entire cost in a few weeks. By preventing the passage of foreign matter, they prevent excess wear, costly freeze-ups, damage to materials and interference with processes.

Exclusive Double-Action Principle Provides:

MECHANICAL SEPARATION—Deflector Cup drives foreign matter to bottom of container.

FILTRATION—Air or gas rises thru the original Radial Fin Insert which removes the lighter material.

DOLLINGER STAYNEW FILTERS

DETAILS ON REQUEST

DOLLINGER CORPORATION

3 CENTRE PK., ROCHESTER 3, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 3300 If you write the maker

Ledeen CYLINDERS IMPROVE THE JOB

CYLINDER CONTROLS PLUG VALVE FOR AUTOMATIC BATCHING

This 2" diam. x 12" stroke Ledeen Heavy Duty air cylinder using 100 P.S.I. air supply, operates a steam jacketed plug valve.

Valve controls flow of asphalt from weighing machine to mixer. Batching and mixing is improved. Manual operation is eliminated.

There are Ledeen *medium duty, heavy duty and super duty* cylinders for air, oil or water operation ready to help you, wherever you have to . . . push or pull • lift or lower • press or squeeze • tilt or turn • open or close. Standard Ledeen cylinders and mounting attachments are available from distributors' stock in major cities. Special cylinders on order.

LEEDEN CYLINDERS ARE GOOD CYLINDERS

WRITE FOR NEW BULLETIN 500

Ledeen MANUFACTURING CO.

1602 SAN PEDRO STREET • LOS ANGELES 15, CALIF.

BREVITY—Identify by IEN - 3301 If you write the maker

"Safety" code symbol stamps simplify inspection and piece work identification marking. Shown is a complete range of stamps for various inspection code marks. Write today for data on stock or specially designed stamps for your coding requirements.

M.E. CUNNINGHAM CO.

SAFETY STEEL STAMPS

99 East Carson Street • Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 3302 If you write the maker

CLEANING . . Steam spray gun delivers hot solution under pressure

Source: OAKITE PRODUCTS INC.
116-A Thames St., New York 6, N. Y.

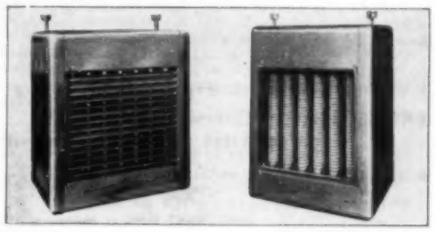
Detergent solution in an open storage container is connected at a ¼-in. valve near the rear of this new Model-502 solution-lifting steam gun. Steam, also connected at the rear, provides suction and delivery pressure capable of lifting the steam detergent spray to 12 ft. above the working level when steam pressure on the hose inlet is 100 pounds. The spray is delivered in a round pattern in standard construction. A special flat nozzle, Model 472, is available to form a fan pattern.

The gun measures 7½ ft. in length and weighs 15¾ pounds. It is equipped with two cast-aluminum spade-type insulated handles. The one at the rear is employed to turn the nozzle to direct the spray as required. A reinforced rubber apron insulates that portion of the gun in front of the operator and protects him against the danger of contact burns.

BREVITY—Identify by IEN - 3303 If you write the maker

HEATING . . Gas fired space unit, 30 sizes to 1,500,000 btu. per hour

Source: SURFACE COMBUSTION CORP.
2373-77 Dorr St., Toledo 1, Ohio



Thirty types and sizes are included in the company's 1951 Janitrol line of unit heaters. Each is a complete self-contained gas furnace ready for operation as soon as it can be connected to a gas-supply line and a source for electric current, in cases where the unit employs the motor and fan.

The line begins with ratings at 50,000 btu. per hour and extends to 225,000 btu. per hour in fan-equipped suspended models. Five blowers rate to 450,000 btu. per hour. Additional units without fan or motor for application in air conditioning ducts, floor models equipped with air filters and large floor units with input ratings to 1,500,000 btu. complete the line. In each of the units the heat exchanger is finished with a high-temperature ceramic material resistant to attack by acid and moisture that may be encountered in service.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 3304 If you write the maker

"Key to Lower Costs" contains actual case studies of manufacturers in different types of business. These studies show how much time, effort, space and money have been saved through properly engineered materials handling systems. Doubtless you'll find a problem similar to your own. Write for your copy today.

Logan Conveyors

LOGAN CO., 200 CABEL ST. • LOUISVILLE 6, KY.

BREVITY—Identify by IEN - 3305 If you write the maker

DEPENDABLE TEMPERATURE CONTROL TO 1000° F

Thermohm electric resistance thermometer used with Electromax Controller

This Electromax Controller provides modern *electronic* regulation for temperatures of ovens, furnaces, kettles, tanks, etc. Type of regulation can be either on-off or proportional, yet the instrument is the acme of dependable simplicity. Being a resistance bridge, it needs no standard cell; has only one moving part; is not affected by tremors or vibration; usually needs no attention for months at a time. For details, write us at our nearest office or at 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP COMPANY, 4901 STENTON AVE., PHILA. 44, PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES

Jrl Ad ND47(1c)

BREVITY—Identify by IEN - 3306 If you write the maker

SLASH CLEANING and COOLING COSTS with REX FLAT SPRAY NOZZLES

• The hard-hitting flat sheets of water from Rex Flat Spray Nozzles do a top-notch job of cleaning or cooling a wide range of products—and at practically no cost.

Of simple, one-piece construction, they require no adjustment . . . assure a flat, uniform spray of maximum impact force. The only operating cost is for water, and consumption is very low.

Send for our descriptive booklet, using coupon below.

REX FLAT SPRAY NOZZLES

Chain Belt Company
1675 W. Bruce Street, Milwaukee 4, Wis. 50-211

Please send me a copy of Bulletin 50-58

Name.....

Company.....*Dept*.....

Address.....

City.....*State*.....

BREVITY—Identify by IEN - 3307 If you write the maker

BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg.,
Pittsburgh 22, Pa.
Offices in Principal Cities

1. Rigid one-piece construction—easy to install.
2. Maximum open area for light and air.
3. Easy to paint—all surfaces accessible.
4. Non-slip Twisted Cross-Bar.
5. Self-cleaning—no sharp corners to clog.

Blaw-Knox Grating Has Them All!

WRITE FOR BULLETIN 2365

BREVITY—Identify by IEN - 3308 if you write the maker

LANSING, MICHIGAN

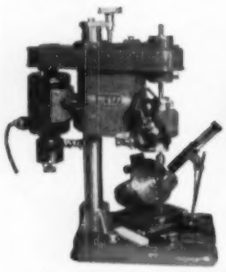
LANSING CO.
LANCO MATERIAL HANDLING EQUIPMENT

BREVITY—Identify by IEN - 3309 if you write the maker

THOMAS TRUCK & CASTER CO.

163 Mississippi River
KEOKUK, IOWA

BREVITY—Identify by IEN - 3310 if you write the maker



Taylor
HI-EFF
PRECISION DRILLING MACHINES

Always Look For The FACTS THAT COUNT!

• Here are seven significant facts . . . They represent "HI-EFF" quality features for sensitive, precision drilling. Write for Bulletin 752.

1. Spindle and chuck run-out .0001".
2. Vaporized lubrication of bearings.
3. Spindle supported by 4 select, precision bearings—other moving parts precisely ground and lapped.
4. Solid column for maximum rigidity.
5. Variable speed—800 to 40,000 R.P.M.
6. Radial positioning of drill head.
7. Counter-balanced spindle affords sensitive, feather-touch feed.

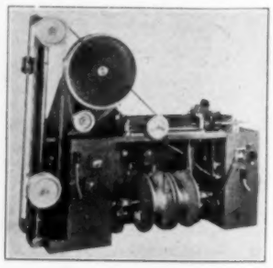
Dynamometers • Static Balancers • Precision Drilling Machines

TAYLOR DYNAMOMETER & MACHINE CO.
528 N. WEST HIGHLAND AVE. • MILWAUKEE 3, WIS.

BREVITY—Identify by IEN - 3311 if you write the maker

WINDING . . Constant tension unit for plastic or rubber coated wire

Source: INDUSTRIAL OVENS, INC.
13835 Triskett Road, Cleveland 11, Ohio



Cable, cord, wire is taken from a plastic or rubber extruding machine by this new constant-tension dual-reel winder at an adjustable rate to a maximum of approximately 2,000 feet per minute. Two ranges are employed, the first to 1,000 fpm., the second from 1,000 to 2,000 fpm. Speed of the winding reel is controlled in synchronism with the wire by the action of a flow-control valve. This valve is operated through appropriate linkage by the motion of the floating sheave in the "dancer" assembly at the left hand side of the machine.

The winding reels are arranged so they can be operated separately or, for the purpose of crossing over from one wheel to the other, in synchronous operation. When both reels are moving at the same speed as the wire a traverse sheave is lifted to disengage it from its drive screw and the traverse block is then slid horizontally until the wire is carried to the proper new feed position. At this point the sheave is lowered to engage it again with the drive screw to wind on the new drum while the loaded one is removed and replaced. Traverse reverses automatically. Its length of movement is adjustable and the lay range of the traverse sheave can be set as desired over a 25 to 1 ratio.

Power is supplied by hydraulic equipment with one circuit for the capstan drive and a separate circuit for the traverse and two reel shaft drives. Oil is pumped by a constant displacement unit direct connected to a 15-hp. ac. motor. The sheaves are made of cast aluminum measuring 30 in. in diameter at the capstan, 8 in. in diameter at the "fleeter" capstan unit and 12 in. in diameter at the "dancer" units. The machine will handle wire or cable to .75 in. in maximum diameter over the extruded jacket applied in a previous operation.

BREVITY—Identify by IEN - 3312 if you write the maker

PROTECTING . . Chemical material decontaminates radioactive deposits

Source: BERSWORTH CHEMICAL CO.
607-11 Waverly St., Framingham, Mass.

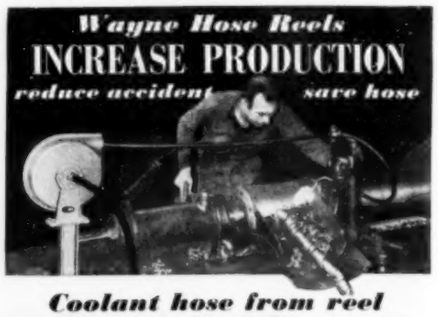
Technical data in Bulletin 2

New form of the company's chemical material, trade named Versene, for control of cations in solutions, has been developed for use as a decontaminating agent for radioactive deposits in clothing, equipment and on a worker's skin. The material is a sodium salt of ethylene-diamine-tetra-acetic acid which has been used for a good many years to dissolve metallic salts or inactive metallic ions.

It is used in detergent formulations to produce stable, water-soluble complex compounds of the radioactive deposits so they can be washed away in a large volume of water. Paste and ointment preparations can also be made for application to the skin or to inanimate objects, if the immersion method is not practical, to obtain the same overall effect. The paste is applied and then is removed by washing with water.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3313 if you write the maker



Coolant hose from reel automatically follows tool

A USEFUL time-saving application of Wayne Hose Reels to supply cooling liquids in machine operations. Operator can give full attention to tool. No hose loops to cause accidents. Saves more hose in a short time than the cost. Compact, convenient, mounts anywhere.

MANY OTHER USES

Used as a bench reel . . . or overhead for hand air tools, providing suspension as well as air supply. Keeps tools off bench in convenient reach. Write today for bulletin.

THE WAYNE PUMP CO., FT. WAYNE, IND.
TORONTO, CAN. — *Hose Reel Division*

Wayne Industrial Hose Reels
FOR AIR, WATER, FLUID LUBRICANTS AND COOLANTS

BREVITY—Identify by IEN - 3314 if you write the maker

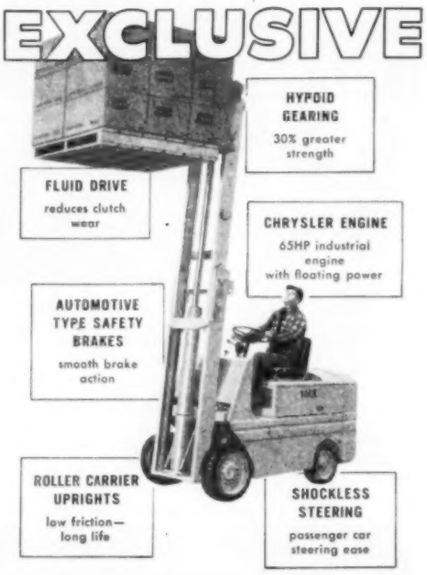
Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

Your inquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 3315 if you write the maker



Only YALE combines all these modern engineering achievements in one superior gas truck!

NOW READY FOR YOU, *developed to peak efficiency after 2 years of intensive on-the-job testing.* Here are exclusive features that will bring more time-saving, man-saving, money-saving advantages to your materials handling than was ever before possible!

In every vital part of this truck you get the finest new developments in automotive engineering—every part built for years of hard service—every part tested and re-tested under rugged on-the-job conditions.

That's why today you get smooth, powerful gas truck operation day-in day-out. On steep ramps, rough roadways, in any weather—this YALE Gas Truck *delivers*, moves, lifts and stacks the goods. Let us show you exactly *how* YALE can accomplish all of this in your plant. Write for the facts today.

Capacities up to 10,000 pounds

YALE MATERIALS HANDLING EQUIPMENT
THE YALE & TOWNE MANUFACTURING COMPANY

In Canada write The Yale & Towne Manufacturing Company, St. Catharines, Ontario.

WRITE TODAY FOR FULL INFORMATION

The Yale & Towne Manufacturing Co., Dept. 364
Roosevelt Boulevard & Haldeman Avenue, Philadelphia 15, Pa.

I am interested in cutting my materials handling costs.
_____ Please have your local representative call on me.
_____ Please send me FREE detailed literature.

Name_____
Company_____
Street_____
City_____ State_____

YALE is the registered trademark of The Yale & Towne Manufacturing Co.

▼ BREVITY—Identify by IEN - 3317 If you write the maker ▼

THIS P-K SCREW CUTS COSTS OF ASSEMBLY UP TO 50%

Forms thread as it's turned in

SKIPS
Tapping

AVOIDS
Belting
Riveting
Inserts in Plastics

SAVES
Time and Trouble in Millions of Assemblies

P-K TYPE Z
Hardened SELF-TAPPING SCREW
One of six types for every metal and plastic assembly. For details, write Parker-Kalon, 200 Varick St., New York 14, N.Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
YOU'RE O.K. WITH P-K — THE ORIGINAL
PARKER-KALON SELF-TAPPING SCREWS

AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

▼ BREVITY—Identify by IEN - 3318 If you write the maker ▼

Let our ENGINEERING DEPARTMENT Supply the answer to your PRODUCTION ASSEMBLY PROBLEM

Our thoroughly trained engineers are ready to design equipment for your individual needs . . . No package goods . . . Whatever we furnish you will be planned for your particular purpose . . . And our 25 years of specialized experience qualifies us to do your job successfully . . . Thousands of manufacturers have profited immeasurably through greatly stepped-up production as a result of our service. You, too, can benefit likewise by the use of D.P.S. power-driven machines. Get further details. Mail the coupon today . . . Also send sample assembly for production estimate.

AVAIL YOURSELF OF OUR UP-TO-DATE EXPERIMENTAL LABORATORY EQUIPPED TO SOLVE THE "IMPOSSIBLE"!

The SOLUTION may be tied in with one of our FOUR MAJOR PRODUCTS!

POWER SCREWDRIVERS
HOPPER FEEDING UNITS
NUT DRIVERS
SPECIAL ASSEMBLING MACHINES

SEND SAMPLE ASSEMBLY FOR PRODUCTION ESTIMATE

MAIL COUPON FOR CATALOG
DETROIT POWER SCREWDRIVER CO.
2015 WEST FORT ST., DETROIT 16, MICHIGAN
Send your catalog and further details.
COMPANY NAME
BY
STREET ADDRESS
CITY STATE
DETROIT POWER SCREWDRIVER CO.

1926 Our 25th ANNIVERSARY 1951

▼ BREVITY—Identify by IEN - 3320 If you write the maker ▼

TRUCK . . Engine driven wheelbarrow weighs 27 pounds at operator's end

Source: S & S VENDING MACHINE CO.
674 Lincoln Ave., San Jose 10, Calif.

Gasoline engine, air-cooled design, is mounted under the body of this new wheelbarrow and drives by friction against the rubber-tired wheel. Operation is controlled by turning the right-hand barrow handle. There is sufficient power to move the loaded unit up a 30-deg. incline. Pow-R-Barrow is the trade name.

Dimensions are 76 in. in length, 29 in. in width, 27½ in. in height. The body rates 4.1 cu. ft. when level filled. Empty weight is 105 lb. of which 78 lb. is on the wheel.

▼ BREVITY—Identify by IEN - 3321 If you write the maker ▼

PACKAGING . . Technical service for government packaging requirements

Source: VANANT PRODUCTS INC.
728-32 W. Virginia St., Milwaukee 4, Wis.

Small samples on request

The company announces availability of technical service through its field representatives to assist manufacturers who are making products for the government to meet military specifications with reference to waterproof, greaseproof and moisture-vapor-proof packaging. Following this service, the company is prepared to supply packages in any specified sizes and shapes from small 3 by 3-in. bearing-bag units to bags sufficiently large to cover complete aircraft engines.

Materials employed in the bags are selected for given requirements. They include polyethylene-coated kraft, paper-backed vinyl-coated aluminum foil, cloth-backed vinyl-coated aluminum foil as representative.

▼ BREVITY—Identify by IEN - 3322 If you write the maker ▼

COUNTERSINKING . . Cutter with teeth for chatter free operation

Source: M. A. FORD MFG. CO.
741 W. First St., Davenport, Iowa

Off-center flutes characterize this new countersinking cutter, which is suited also for chamfering, burring, valve-seat finishing and center reaming. Quad is the designation. Operating range is 25 to 75 fpm. with a water-soluble coolant or cutting oil recommended for high speed and first class finishing. The cutter can be applied in bronze, brass, cast iron, copper, steel, aluminum, magnesium, rubber, plastic.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3323 If you write the maker ▼

RUEMELIN BLAST GENERATORS

A practical low-cost sand blast used by plant engineers for maintenance work. Cleans rust, paint, scale from piping, valves, fittings, renovating buildings, stripping paint from trucks, busses, trailers, railroad cars, structural steel, storage tanks, ship hulls, etc. Can be fitted with Wet Adapting Nozzle for eliminating dust.

Write for Bulletin M-C

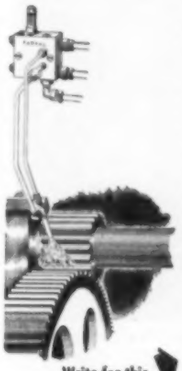
RUEMELIN MFG. CO.
3863 N. Palmer St.
Milwaukee 12, Wis.

Manufacturers and Engineers
SAND BLAST AND DUST COLLECTING EQUIPMENT, WELDING FUME COLLECTORS.

▼ BREVITY—Identify by IEN - 3324 If you write the maker ▼

New Farval Spray Valve

METERS LUBRICANTS TO SLIDE SURFACES AND OPEN GEARING



Write for this FREE bulletin

BY an ingenious adaptation of the familiar Farval Dualine Valve, either grease or oil is sprayed through a nozzle—onto any desired area, in any amount, at any interval.

The new Farval Spray Valve can be added to a regular Farval Dualine Lubrication System wherever compressed air is available—or a complete system of spray valves may be installed, served by either manual or automatic pumping unit.

Farval Spray Valves have been thoroughly tested in service on a wide variety of machines and equipment, supplying lubricant efficiently, economically and safely to open gearing, slide surfaces and other areas where Farval closed systems are not readily adaptable.

For full description with diagrams, get Farval Bulletin No. 60. The Farval Corporation, 5258 East 80th Street, Cleveland 4, Ohio.

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

▼ BREVITY—Identify by IEN - 3325 If you write the maker ▼

For a better drive, select the proper Cleveland unit

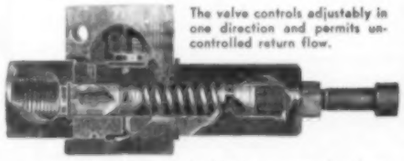
WRITE for copies of the latest Cleveland catalogs for full information on all types and sizes of worm gear speed reducers —including rating tables, dimensional diagrams and data for both standard and fan-cooled units. Ask for Catalog 200 for standard drives and Catalog 300 for Speed-aire (fan-cooled). The Cleveland Worm & Gear Co., 3258 East 80th St., Cleveland 4, O.

CLEVELAND Worm Gear Speed Reducers

▼ BREVITY—Identify by IEN - 3326 If you write the maker ▼

An adjustable FLOW REGULATOR

This newly perfected adjustable Flow Regulator holds at a constant rate even though the pressure fluctuates.



The valve controls adjustably in one direction and permits uncontrolled return flow.

The spring back piston in the housing is mounted in front of the adjustable screw. It carries a calibrated orifice; operates axially on change in inlet pressure so as to increase the throttling action.

Four sizes, ¼, ⅜, ½, and ¾ inch. Overall length, 4½ to 7½ inches. Adjustable over a 50% flow range. Maximum pressure is 3000 pounds.

Write for illustrated circular.

West Coast: H. E. Webb
918 North Kenilworth Avenue • Glendale, California

WATERMAN ENGINEERING Company

BREVITY—Identify by IEN - 3327 if you write the maker

SYNTRON ELECTRIC HAMMERS

Speed Up

Drilling—

Cutting—

Chipping

in concrete and masonry

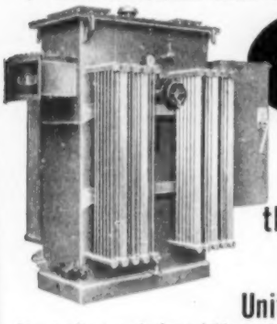
Drilling holes to hang shafting, anchor machinery, install lighting fixtures—channeling for conduit—cutting openings, etc.

3600 powerful blows per minute make short work of these time-consuming, laborious jobs.

Write for catalog folder.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 3328 if you write the maker



WAGNER Unit Substation Transformers

the *Vital* part of any Unit Substation

You can be sure of a dependable continuous flow of power from a Wagner transformer and you can be sure that it has been carefully designed to meet your distribution requirements.

Wagner unit substation transformers with incoming high voltage switch sections to meet your requirements, and with proper throats on the secondary side for connection to any make of switchgear, are available in the usual range of ratings up to 2000 kva.

Wagner unit substation transformers can be throat connected to any make of switchgear.

Our free bulletins TU-13 and TU-56 describe the design and construction features that make Wagner liquid-filled and dry-type unit substation transformers outstanding.

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVE., ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 3329 if you write the maker

BIN-LEVEL CONTROLS

2 BIN-DICATORS Often Replace 1 Man

BIN-FLO Aerating Units Keep Finely-Ground Materials Moving

ECONOMICAL MATERIAL CONTROL

DEPENDABLE BIN-LEVEL INDICATION

Mail this Coupon

THE BIN-DICATOR CO., 13946 Kercheval, Detroit 15, Mich.

Please send now 20-page catalog giving complete information and specifications on BIN-DICATORS. Also please send information on BIN-FLO Aerating Units.

Name_____

Address_____

City_____ Zone_____ State_____

N-4

BREVITY—Identify by IEN - 3330 if you write the maker

TESTING . . Electronic instrument to circuit test tubes, appliances

Source: TRIPLETT ELECTRICAL INSTRUMENT CO. 11-15 Harmon Drive, Bluffton, Ohio

Model 3413-A is a new test instrument to provide readings of both "short" and "open" circuits on the elements in electronic tubes and to provide "continuity" test in checking electrical appliances, motors. It mounts a 6-in. meter with a three-color scale reading "good", "questionable" and "bad". Line voltage is indicated.

BREVITY—Identify by IEN - 3331 if you write the maker

INSULATING . . Molded magnesia in pipe sections and blocks and cement

Source: EHRET MAGNESIA MFG. CO. 51 Ehret St., Valley Forge, Pa.

Ask for copy Bulletin 9-0

Thermalite trade names the 85 per cent magnesia insulation that is now in production by molding in the company's new plant. The insulation is available in sectional form for pipe sizes from ¼ to 18 in. and insulation thicknesses to 2½ inches. Each sectional size conforms with the new Simplified Thickness Standards so that one section will fit inside another section of the next larger diameter. Any desired thickness can be built up, starting with a pipe of a given size, to the maximum diameter available.

Standard flat blocks, also in the line, measure 6 in. in width by 36 in. in length and are available in six thicknesses between 1 and 3 inches. Segmental blocks for pipe sizes above 18 in. are available to specification. The insulation is suitable for temperature to 600 deg. F. It is not affected by steam or water leakage. It does not shrink or deteriorate structurally.

BREVITY—Identify by IEN - 3332 if you write the maker

LIGHTING . . Flexible arm fixture for incandescent lamp, aluminum shade

Source: GARDNER PRODUCTS CO. 13194-98 Turner Ave., Detroit 4, Mich.

List price is $5.85 for this new Porta-Flex lighting fixture. It is designed to mount on a machine or bench. The assembly includes an 18-in. length of flexible steel tube, a mounting base, brass key socket and the cast-aluminum shade. The fixture takes a 60-watt lamp. It is equipped with a 6-ft. extension cord. The base mounts vertically or horizontally as desired.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3333 if you write the maker

seamless – welded carbon – alloy – stainless

TUBING SATISFACTION for ALL

pressure and mechanical requirements

B&W SEAMLESS and WELDED TUBES

A good man to know

. . . Your B&W Tube Representative . . . because his factory training in "tube-technics", and specialized knowledge of applications may help you to uncover tubing economies in buying and applying carbon, alloy and stainless grades.

THE BABCOCK & WILCOX TUBE COMPANY
General Offices: Beaver Falls, Pa.
Plants: Alliance, Ohio, and Beaver Falls, Pa.

Sales Offices: Alliance, Ohio • Beaver Falls, Pa. • Boston 16, Mass. • Chicago 3, Ill. • Cleveland 14, Ohio • Denver, Colo. • Detroit 26, Mich. • Houston 2, Texas • Los Angeles 15, Calif. • New York 16, N. Y. • Philadelphia 2, Pa. • St. Louis 1, Mo. • San Francisco 3, Calif. • Syracuse 2, N. Y. • Toronto, Ontario • Tulsa 3, Okla.

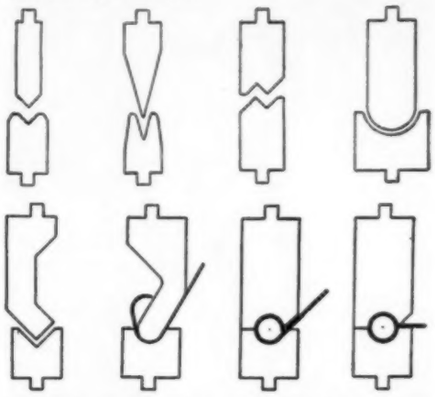
BREVITY—Identify by IEN - 3334 if you write the maker

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

Here are a few examples:

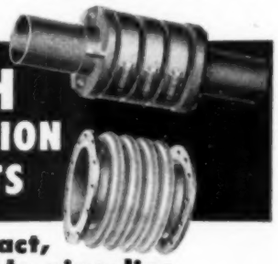


RAFTER MACHINE COMPANY, INC.
SINCE 1917

249 Stephens Street Belleville 9, N. J.

COLD ROLL FORMING MACHINES AND GANG SLITTERS

BREVITY—Identify by IEN - 3335 if you write the maker



CMH EXPANSION JOINTS

For compact, dependable pipe-line expansion control

CMH precision-made expansion joints are leakproof assemblies for absorbing pipe-line expansion and contraction and for correcting for misalignment. They require no maintenance and are very compact. Three types are available for working pressures up to 1500 psi. Suitable for temperatures to 1400° F. Sizes range from ⅝" to 30" I.D. Write for complete information.

CHICAGO METAL HOSE CORPORATION
1333 S. Third Ave. Maywood, Ill.
Plants at Maywood, Elgin and Rock Falls, Ill.
In Canada: Canadian Metal Hose Co., Ltd., Brampton, Ont.

CMH **ONE DEPENDABLE SOURCE** for every flexible metal hose requirement

BREVITY—Identify by IEN - 3336 if you write the maker

MORE SPEED MORE SUPPORT

BALL-BEARING BAND-SAW GUIDES

IMMEDIATE DELIVERY — WRITE TODAY

For faster band-saw production—greater safety to operators—cutting down saw-blade breakage, install PADDOCK BALL-BEARING BAND-SAW GUIDES. Thousands now in use in every type of industry. Ball-Bearing wheels (interchangeable) running with the blade give strong, friction-free support and in effect hold working portion of blade as if in a frame. Very reasonably priced! Can be used on old or new band-saws for greater economy and faster production. Write for circular and price.

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut St., Kansas City 6, Mo.

Paddock BALL-BEARING BAND SAW GUIDES

BREVITY—Identify by IEN - 3337 If you write the maker

Aerovent FAN

EXTENDED SHAFT FAN

KEEPS MOTOR OUT OF AIR STREAM

Extended shaft may be water jacketed, if desired. Sizes 12" to 84". 2, 4, or 6 Blades.

For industrial applications where it is desired to keep the motor out of the air stream to meet Underwriter's specifications for exhausting explosive vapors. It protects the motor from high temperature air, corrosive fumes, or combination of obnoxious fumes and moisture.

Certified Ratings PFMA

Other Models
Direct Connected, Man Cooling, Duct Type, Belt Driven, Pulley Driven. Sizes 12" to 144".

Write today for
ENGINEERING BULLETIN

AEROVENT FAN CO., INC.
ASH and BROWN STREETS, PIQUA, OHIO
Competent Sales Engineers in Principal Cities

BREVITY—Identify by IEN - 3338 If you write the maker

FOR EFFICIENT PROCESS HEAT

CHROMALOX *Electric* HEATERS

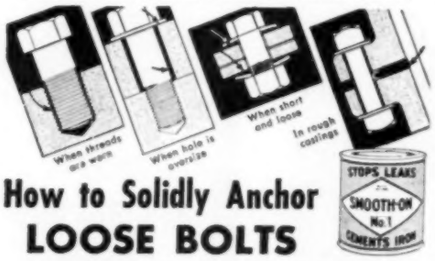
Easy to Install · Economical to Operate
CHROMALOX Electric Heaters provide concentrated and controlled heat that is dependable, safe, clean and efficient. They may be used for heating gases, air, liquids, platens, dies, molds, rolls, soft metals and countless other applications. Why not check the time and money saving advantages CHROMALOX Heating Units will give you in your plant?

FOR MORE "KNOW HOW"
Request Catalog 50 and "100 Ways to Apply Electric Heat" booklet for full data on using electric heat in your plant.

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Circulation Heaters Advertisement, Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 3339 If you write the maker



How to Solidly Anchor LOOSE BOLTS

Bolts with worn threads—undersize bolts in oversize holes—bolts passing through thin walls—bolts holding ill-fitting cast flanges—all can be tightened firmly with quick-setting Smooth-On No. 1 Iron Cement. Use it, too, to lock nuts tight, and to cover and protect countersunk bolt heads in metal or wood. These repairs stay tight because Smooth-On expands slightly as it hardens. Buy Smooth-On No. 1 in 7 oz., 1 lb., 5 lb., 20 lb., or 100 lb. size and keep it handy. If your supply house hasn't Smooth-On, write us.

FREE REPAIR HANDBOOK

40 Pages filled with time-saving, money-saving repairs on plant, shop and home equipment made with No. 1 and other Smooth-On Cements. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
570 Community Ave., Jersey City 4, N. J.

Do it with SMOOTH-ON
THE IRON CEMENT OF 1000 USES

BREVITY—Identify by IEN - 3340 If you write the maker

PYROMETER . . Indicates, controls and protects furnaces, kilns, ovens

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Type HP-1 and HP-2 for temperature indication and Type HP-3 and HP-4, respectively for two-position and three-position control, make up a new line of pyrometer equipment for temperature indication and control in industrial processes and to protect the equipment against overheating. Overall range is between zero and 3,000 deg. F. Desired range within this overall can be specified. The company is prepared to supply thermocouples, thermocouple components and accessories to comprise a complete installation.

The indicating instrument, a millivoltmeter, connects to a thermocouple in the heated equipment. Difference in temperature between the hot and cold junctions of the thermocouple causes small voltages to be generated in proportion to the temperature difference. This voltage is indicated on the instrument scale.

In the two-position control assembly a variable set point is added to the indicator so the operator can predetermine the control limit. A relay, mercury switch or contactor is then actuated to open the control circuit or to close it again in order to maintain a set temperature.

The three-position control operates in the same manner except that it has two separate circuits, both of which can be employed to bring a unit of equipment up to near the required temperature where one is cut out and the other continues to operate until the final control opens its circuit.

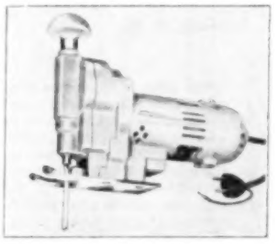
A variation of the two-position control applies with a separate controller to protect against possible failure of the main circuit controller. It opens the circuit at a predetermined temperature above the normal point that has been selected for power cut-off. It also closes an alarm circuit to indicate the excess temperature.

Bulletin GEA-5534, 8 pages, illustrates and describes the four units for indicating, controlling, protecting.

BREVITY—Identify by IEN - 3341 If you write the maker

SAWING . . Portable electric tool reciprocates a draw cutting saw blade

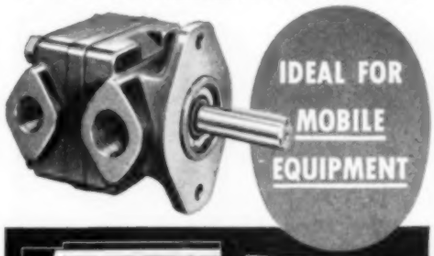
Source: FORSBERG MFG. CO.
123-27 Seaview Ave., Bridgeport 1, Conn.



Model 2 is a new and larger model of the company's previously developed portable Whiz saw. It is equipped with a 110-volt universal motor to reciprocate a saw blade that operates in a draw-cutting action against a work-support foot secured to the housing. The tool will cut wood, bone, fibre, composition materials to 2 in. in thickness. It will cut light-gage sheet metals when equipped with a high-speed steel blade. Weight is 6¾ pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3342 If you write the maker



VICKERS SERIES V-200 Balanced Vane Pumps

Expressly designed for rigorous requirements of mobile equipment. Automatic two-way wear compensation maintains correct radial and lateral running clearances at all times. Hydraulic balance eliminates pressure bearing loads. A tough, hard-working, long-life pump, it maintains high efficiency . . . consequently a smaller pump often can be used (saving space and cost). Vane principle provides no-load starting . . . important in cold weather cranking.

Write for CATALOG M-5100

VICKERS Incorporated
Division of The Sperry Corporation
1398 Oakman Blvd. • Detroit 32, Mich.
4493

BREVITY—Identify by IEN - 3343 If you write the maker

Better Cartons *at LESS Cost*

If you are now buying factory-processed cartons, or are erecting set-up cartons with hand labor, the Palmer Carton Former can give you startling economies. In many plants, the savings on carton materials alone pays for the machine in a matter of months! Using inexpensive die-cut blanks, this machine produces well-shaped cartons at speeds up to 102 cartons per minute. Requires no operator—merely has to be kept supplied with blanks.

Write for literature

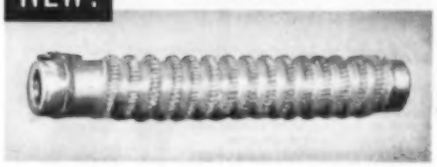
PALMER
Continuous Motion
CARTON FORMER

• CARTON DIVISION •

PACKAGE MACHINERY COMPANY
SPRINGFIELD MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS
DENVER LOS ANGELES SAN FRANCISCO SEATTLE TORONTO MEXICO, D.F.

BREVITY—Identify by IEN - 3344 If you write the maker

NEW! ALL THE RIBFLEX ADVANTAGES ····IN HIGHER WATT RATINGS



Faster heat dissipation. Greater space saving.

New models of Ward Leonard's Ribflex Resistors—rated 85 to 95% higher than same-sized ordinary wire-wound resistors—are made in 400, 500 and 550 watt sizes. Lengths: 8½, 10½ and 11¼ in., respectively.

Reflexed metal alloy ribbon wound on edge and permanently secured to core gives greater area for heat dissipation—allows increased temperature rise. The new, larger size Ribflex units are your answer for high current, low resistance applications. Complete range now 75 to 550 watts.

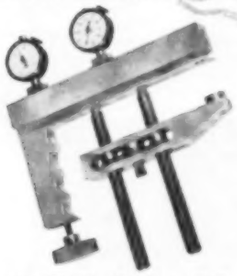
Write for Bulletin 19. WARD LEONARD ELECTRIC CO., 53 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

BREVITY—Identify by IEN - 3345 If you write the maker

Portable HARDNESS TESTER

DIRECT DIAL ROCKWELL READINGS



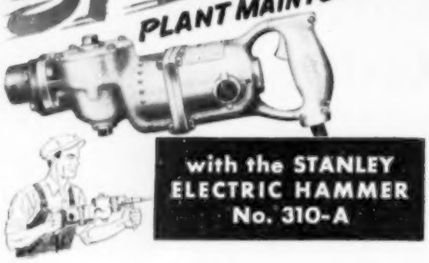
- FOR "ON THE SPOT" TESTING of bar stock • sheet stock • tubing • gears • crankshafts • cylinder blocks • and other hard-to-get-at pieces.
- ACCURATE, EASY TO USE
- TESTS BOTH INSIDE AND OUTSIDE SURFACES of specimens up to 5" in diameter or thickness.
- COMES IN COMPACT CARRYING CASE with three test blocks, flat anvil, "V" anvil, convex anvil, diamond and ball indentors.

WRITE FOR ILLUSTRATED BULLETIN AND PRICES

RIEHLE TESTING MACHINES
Division of AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois
"ONE TEST IS WORTH A THOUSAND EXPERT OPINIONS"

BREVITY—Identify by IEN - 3346 if you write the maker

SPEED PLANT MAINTENANCE



with the STANLEY ELECTRIC HAMMER No. 310-A

Machine installation, cable laying, sign hanging . . . maintenance jobs that call for drilling or chipping of concrete, stone, or brick; scaling rust; etc. . . . all can be done faster and easier with the help of a Stanley Electric Hammer.

The Stanley No. 310-A is lightweight and completely self-contained. FREE thrown plunger, not direct drive. Does not tire operator. Drills holes up to 1⅛". Operates on AC or DC. See your dealer or write for folder. Stanley Electric Tools, 414 Myrtle Street, New Britain, Connecticut.

HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL

STANLEY

Reg. U.S. Pat. Off.

BREVITY—Identify by IEN - 3347 if you write the maker

Chicago RIVET "912"

AUTOMATIC RIVET SETTER

CUTS COSTS 3 WAYS

1 FASTENS FASTER . . . Only the speed of the operator limits the 912's riveting speed. Completely automatic. A push on the foot pedal automatically feeds, inserts and clinches the rivet.

2 DOES WORK OF SEVERAL MACHINES Quick change rotary hopper and raceway makes the 912 adjustable in 5 to 10 minutes to set different size rivets. Adjustable anvil height and 12-inch throat provide further versatility.

3 SAVES ON MAINTENANCE . . . The 912 is massively built to stand the shocks of constant use and is designed for quick, easy servicing and parts replacement.

If your assembly calls for 3/16" steel tubular rivets or smaller, of ¾" lengths or less, ask us to show you how the 912 can cut your fastening costs. Send a sample of your problem assembly (or blueprint) for a free fastening analysis.

FREE CATALOG *contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.*

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

BREVITY—Identify by IEN - 3348 if you write the maker

Send Coupon Today for Your FREE Copy

"WHY IT PAYS TO ANCHOR YOUR MACHINES WITH *UNISORB*®"

Here's the book that tells you how to

- Avoid destructive floor-drilling with UNISORB machine anchoring . . . the modern way that needs no bolts, no lag screws.
- Eliminate 60%-85% transmitted machine noise and vibration.
- Achieve a safe, dependable machine mounting that lasts for years and years *with no maintenance.*
- Save time, expense and confusion when installing new machinery or repositioning present machinery.

The FELTERS Co.
210-J SOUTH ST.
BOSTON 11, MASS.

Gentlemen:
Please send my free copy of "Why It Pays to Anchor Your Machines with UNISORB."

NAME .....
COMPANY ..... TITLE .....
STREET .....
CITY & STATE .....

BREVITY—Identify by IEN - 3349 if you write the maker

PAINTING . . Electric spray gun, self-contained, for paint, liquids

Source: CHAMPION IMPLEMENT CORP.
45 W. 45th St., 3rd Flr., New York 19, N. Y.

Electric vibrator in the aluminum die-cast housing of this new gun actuates a small piston and cylinder to draw paint or other liquid from the 25-oz. glass container and deliver it through the spray nozzle. No compressed air is required. Action can start on connecting to a 110-volt 60-cycle ac. line and pressing the trigger. Model 71 for industrial use has a three-conductor cord, lists at $15.

BREVITY—Identify by IEN - 3350 if you write the maker

CIRCUIT BREAKER . . Enclosed design for ac. feeders on 600 volts or less

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.

Is suited for frequent action

Individual assembly in approximately square steel enclosures can be specified now for the company's Types G-25 and G-50 low-voltage air circuit breakers. The units were previously available only as bare breakers or in metal-enclosed switchgear. The front of the new enclosure is equipped with a removable hinged panel, ventilating louvers, latching mechanism and door handle, a hasp for a padlock, the necessary flash barriers and an indicator window.

The rear cable-entrance can be separated from the breaker housing and includes removable cover plates at the top, bottom and sides. The plates carry 3 to 4⅝-in. knockouts for the cables. Weatherproof units are rubber gasketed. Installation is in ac. circuits of 600 volts or less to handle fault currents of 25,000 and 35,000 amperes. Continuous-current rating is 35 to 1,600 amperes.

BREVITY—Identify by IEN - 3351 if you write the maker

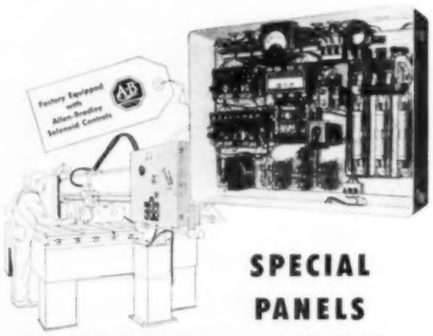
FURNITURE . . Foam rubber cushion for application on a laboratory stool

Source: FISHER SCIENTIFIC CO.
715-19 Forbes St., Pittsburgh 19, Pa.

List price is $5 for this new cushion in which foam rubber about an inch in thickness is covered with Koroseal plastic and is provided with a skirt to fasten on a circular stool top measuring 12½ to 13 in. in diameter. Grommets permit breathing in the rubber which is resilient and non-matting. The pad provides a comfortable seat for long periods as in laboratory work.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 3352 if you write the maker



SPECIAL PANELS for SEQUENCE CONTROL

Any Size • Any Sequence • Any Machine

Allen-Bradley special control panels can be engineered to fit your particular machine. They can be designed for any sequence of automatic operation of motor driven machines. Such special panels, made by Allen-Bradley from standard components, provide correct sequence control, greater safety for operators, and lower installation and maintenance costs. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 3353 if you write the maker

Faster, Better, More Accurate...

PERFECT FOR VOLUME PRINT PRODUCTION!

Design changes made – in Minutes!

The Ozalid STREAMLINER duplicates anything drawn, typed or written—in seconds!* Gives you permanent, accurate copies in any size—several colors—on a variety of papers, cloths and films. Printing speed: up to 10 ft. per minute. Changes quickly, easily made with Ozalid *intermediate!*

FREE: For complete information, write for booklet. OZALID, Dept. H-8, Johnson City, N.Y. Or call your local distributor.

**If light won't shine through your original, an inexpensive intermediary step is taken.*

Cut Copying Costs . . . Use OZALID

Johnson City, New York. Ozalid in Canada—Hughes Owens Co., Ltd., Montreal

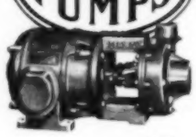
A Division of General Aniline & Film Corporation. *"From Research to Reality."*

BREVITY—Identify by IEN - 3354 if you write the maker

PEERLESS

OFFERS A COMPLETE LINE OF VERY ECONOMICAL AND EFFICIENT GENERAL PURPOSE PUMPS

PEERLESS PUMPS



ELECTRIC, BELTED AND FLEXIBLE COUPLED DRIVES

HEADS: UP TO 260 FT.
CAPACITY: UP TO 5500 GPM
MOTORS: ¼ TO 150 H.P.

This complete line of pumps can be usefully, efficiently and economically applied to almost every commercial and industrial service. Two types available: Type PE is a close coupled electric drive utilizing standard pump motors. Type PB provides belt or flexible coupled drive on common base. Both provide excellent efficiencies and good hydraulic characteristics. They are compact, dependable, economical and durable. Easily maintained. Write today for descriptive Bulletin B-2300. Use it as a buyers' guide for general purpose horizontal pumps.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Factories: Los Angeles, California, and Indianapolis, Indiana.
Offices: New York, Atlanta, Fresno, Los Angeles, Chicago, St. Louis, Phoenix; Dallas, Plainview and Lubbock, Texas; Albuquerque, New Mexico.

BREVITY—Identify by IEN - 3355 if you write the maker

for...

any joint

any pressure

any temperature

'Bestolife Lead Seal Pipe Joint Compound seals threaded and flanged pipe connections for air, water, steam, gas, oil, ammonia, alkalis, acids and chemicals. Unaffected by vibration, contraction or expansion. Will not gall or seize. Allows easy separation of parts. Backed by twenty years of compound experience. Satisfaction unconditionally guaranteed.

See Your Supply Dealer or Write for Literature and Prices

I. H. GRANCELL
1601 E. NADEAU ST., LOS ANGELES 1, CALIFORNIA

▼ BREVITY—Identify by IEN - 3356 if you write the maker ▼

GLAS-KRAFT is one of the strongest, toughest, most flexible, reinforced papers known. It is the most waterproof reinforced paper available. Contains up to 315 ft. of continuous, specially treated glass yarns swirled into each square foot for all-directional reinforcement. Yarns are waterproof-bonded under heat and pressure between two plies of finest specification Kraft.

GLAS-KRAFT IS VERSATILE

- *Wrapping & Packaging*—Textiles, Machinery, Tires, Paper, Steels, Wire Stock, Cement, Chemicals, Furniture, etc.
- *Storage*—Indoor or Outdoor storage of motors, vehicles, machinery, building supplies and equipment . . . As temporary all-weather tarpaulins.
- *Packing & Shipping*—Unitized loading of freight cars . . . As case liners and shrouds for export and domestic shipping.
- *Building & Construction*—As a vapor barrier or sidewall sheathing, protective floor covering, or over subfill.
- *Concrete Curing*—For concrete floors, driveways, sidewalks and roads.

Glas-Kraft is supplied to the U.S. Government in quantity. It meets JAN-P-125 specifications for barrier wrapping material, Types E-1, E-2, E-3.

GET GLAS-KRAFT

Investigate Glas-Kraft when you want an industrial paper to perform where others fail. Available in rolls up to 96 inches in width. Three grades. We also manufacture the revolutionary new Glas-Tape and Glas-Kraft Sealing tape for the corrugated container industry.

A Better Paper Product By

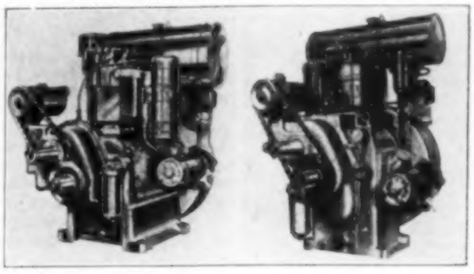
GLAS-KRAFT, Inc.
LONSDALE, RHODE ISLAND

Write today for sample swatches and prices.

▼ BREVITY—Identify by IEN - 3359 if you write the maker ▼

ENGINE . . Air-cooled diesel, single or double cylinder, 8 and 20 hp.

Source: LISTER-BLACKSTONE INC.
856-60 Graybar Bldg., New York 17, N. Y.



Model AS-1, to the right in the illustration, is a new single-cylinder air-cooled diesel engine manufactured in England by Armstrong-Siddeley Company. It rates 8 hp. at 1,200 rpm. Model AS-2, to the left, is a companion engine with two cylinders rating 20 hp. at 1,800 rpm. Both engines are sold and serviced by Lister-Blackstone in the United States and are offered to drive equipment such as generators, compressors, pumps and machinery of various types.

Bore and stroke are both 4¼ inches. Compression ratio is 15 to 1. Both engines are four-cylinder design and employ direct injection. Fuel-oil consumption is .38 lb. per bhp. per hour. Weights are 530 and 725 pounds.

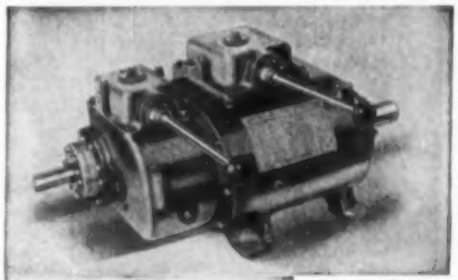
Starting can be handled manually, or the company is prepared to supply electric starter and generator to specification. These are Electric Auto-Lite design.

▼ BREVITY—Identify by IEN - 3362 if you write the maker ▼

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. Bullard vertical turret lathes, etc. CAPACITY 30 HP.

In geometric progression of 1.29 (total reduction of 6:1).



(left) "9008 series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever (automotive type). Ratios: 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . We can supply the necessary *V-belts, sheaves, output pulleys and motors from stock.*

up to 50 h. p.
WESTERN TRANSMISSIONS

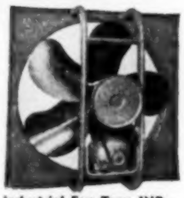
▼ BREVITY—Identify by IEN - 3357 if you write the maker ▼

25 TYPES . . . OVER 150 SIZES!

CHELSEA FANS

— for every industrial and commercial need!

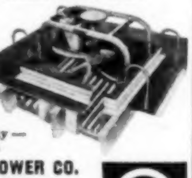
There's a CHELSEA fan for every requirement — each type certified for performance in accordance with the Standard Code of the Propeller Fan Manufacturers Association.



All-Purpose Fan Type BB— For removing smoke, steam, heat, fumes, etc. Heavy duty direct drive fan for continuous operation. One piece panel and orifice, lightweight, simple to install. Sizes from 10" to 30".

Industrial Fan Type IND— For large general area ventilation. Moves large volumes of air under pressure. Sizes from 24" to 60".

Comfort Cooler EV— Designed for low headroom installations, this Chelsea package unit is complete. Quiet operation. Sizes 24" to 48".



Send for Your FREE KIT!

Contains all the information you need to make ventilating installations in factory, office, store or shop.

Write for yours today — address Department M.

CHELSEA FAN & BLOWER CO. INCORPORATED
PLAINFIELD NEW JERSEY

▼ BREVITY—Identify by IEN - 3360 if you write the maker ▼

HOIST . . Drum type electric, 250 to 1,000 lb., 12 and 18 ft. lift

Source: AMERICAN CHAIN & CABLE CO.
927-31 Connecticut Ave., Bridgeport 2, Conn.

Frame B designates new design in the Wright Speedway line of electric drum-type hoists. It is designed particularly for hook suspension and is available in rating of 250, 500 and 1,000 pounds. In each size, either 12 or 18-ft. lift can be specified. Hoist speed is 40 or 56 fpm. for the 250-lb. unit, 14 or 30 fpm. for the 500-lb. assembly and 14 or 20 fpm. for the 1,000-lb. rating. Operation can be specified on single or three-phase, 60 cycle ac. at 110 to 550 volt. Smallest motor rates ¼ hp. The largest rates ¾ hp.

In each case the hoisting line is two parts of $\frac{3}{16}$-in. wire rope of the company's Trulay design. Travel is limited for safety in both upward and downward direction. Minimum distance between hooks in the hook suspension is 27¾ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3363 if you write the maker ▼

CHICAGO Mounted WHEELS

FIRST AND FINEST

10 Big Advantages

1. First in the Field — Unexcelled "Know-How"
2. Stronger Mandrels — Special Analysis Steel
3. Wheels Guaranteed to Remain on Mandrels
4. Constant Concentricity for Perfect Balance
5. Widest Variety of Sizes and Shapes
6. Strongest Construction for Longest Life
7. Greater Cutting Freedom — Faster Cutting Action
8. Better, Finer Finishes Positively Assured
9. Job-Engineered to Your Particular Requirements
10. Recommended by Skilled Mechanics and Craftsmen

Free Sample Wheel

Give details of your operation. We'll supply correct sample. No obligation. Write for Free Catalog.

CHICAGO WHEEL & MFG. CO.
Dept. N, 1101 W. Monroe St.
Chicago 7, Illinois

▼ BREVITY—Identify by IEN - 3358 if you write the maker ▼

THE ANSWER TO

COMPACT
DEPENDABLE
PRECISION-BUILT

MOTORIZED SPEED REDUCTION

PHILADELPHIA GearMotoR

These units greatly simplify the direct application of electric drive to individual machines. They are available in single, double or triple reductions, offering a range of speeds: 780 through 7.5 r.p.m. Motor rating from 1 h.p. through 60 h.p.—A-C or D-C. The motors and gear units are each self-contained and readily separated . . . gears in multi-reduction units may be inspected, without uncoupling from driven machine.

GearMotoR conforms to the recommended standards of the American Gear Manufacturers Association and the National Electrical Manufacturers Association.

CATALOG

Send for 42-page illustrated GearMotoR catalog, containing full information and data necessary for ordering, and please use your Business Letterhead when requesting same.

PHILADELPHIA GEAR WORKS, Inc.
Industrial Gears and Speed Reducers
Erie Avenue and G Street Philadelphia 34, Pa.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON
In Canada: William J. G. Greey Limited, Toronto

▼ BREVITY—Identify by IEN - 3361 if you write the maker ▼

The "One Best Way" for Many Materials-Handling Jobs

MORRIS *Centrifugal* **SLURRY PUMPS**

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

▼ BREVITY—Identify by IEN - 3364 if you write the maker ▼

STOP DUSTS

. . . from Any Dust Source
IMMEDIATELY . . . WITH DUSTKOP

Available from Stock . . . 22 Standard Models Pretested . . . 300 to 10,050 cfm.

for

Surface, Tool, Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost *all* kinds of industrial dusts.

Ask for Catalog 605-2. Describe dust problem for recommendation by return mail—no obligation.

Aget-Detroit Co., 401 Main St., Ann Arbor, Mich.

That's a Model 1150; takes all the dust from two 18" wheels. Same unit would handle dust from 3 surface grinders.

BREVITY—Identify by IEN - 3365 If you write the maker

CAMBRIDGE VOLTAMOSCOPE (an indicating instrument) AND VOLTAMOGRAPH (a recording instrument) FOR POLAROGRAPHIC ANALYSIS

The VOLTAMOSCOPE is a non-recording instrument on which the voltage and current are read and manually plotted. Many chemical determinations are simply made by reading the currents of two known voltages and finding the difference.

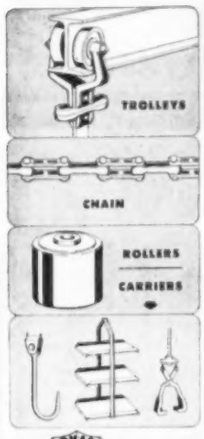
The VOLTAMOGRAPH consists of a robust pen-writing galvanometer with amplifier and a potentiometer with chart driving mechanism. Suitable for industrial and research purposes. The voltage-current graph is automatically drawn. Operates directly from A.C. line.

Identical electrodes are used for both indicating and recording models. *Write for bulletin B 255.*

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal, New York 17, N. Y.
PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

BREVITY—Identify by IEN - 3366 If you write the maker

WEBB CONVEYOR EQUIPMENT, PARTS AND ACCESSORIES FOR ALL PURPOSES



ASK FOR CATALOGS
NO. 46 TROLLEY CONVEYORS
NO. 51 FLOOR TYPE CONVEYORS

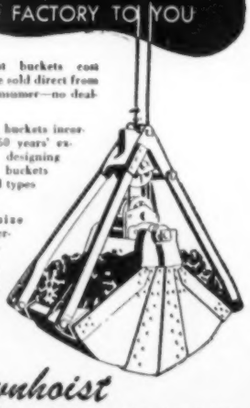
WEBB COMPANY — OFFICES IN PRINCIPAL CITIES · 8915 ALPINE AVE. DETROIT 4, MICH.
MANUFACTURERS OF OVERHEAD AND FLOOR TYPE CONVEYORS

BREVITY—Identify by IEN - 3367 If you write the maker

Buy a Better Bucket FOR LESS MONEY Buy Brownhoist

DIRECT FROM FACTORY TO YOU

- Brownhoist buckets cost less—they are sold direct from factory to consumer—no dealer profits.
- Brownhoist buckets incorporate over 50 years' experience in designing and building buckets for handling all types of materials.
- Standard size rope-sheave, power-wheel and link-type Brownhoist buckets are available for immediate shipment.



Brownhoist
Write for illustrated catalog of Brownhoist Buckets
INDUSTRIAL BROWNHOIST CORPORATION
139 Washington Ave., Bay City, Michigan.

BREVITY—Identify by IEN - 3368 If you write the maker

CASTER . . Swivel and rigid unit, pressed steel yoke, 5 to 10 inches

Source: BOND FOUNDRY & MACHINE CO.
304 S. Penn St., Manheim, Pa.

Load rating is 1,800 lb. for this new Series 40 and 41-A-MH swivel and rigid casters with a 5 by 2½-in. wheel. It is 2,300 lb. for the 6, 8 and 10-in. sizes, all based on a semi-steel or Celoron wheel. Lower capacities are quoted for soft and hard-rubber treads with the rubber vulcanized in place. Construction is in pressed steel employing heavy sections of uniform thickness.

Swivel caster rides on ball bearings in hardened races in a construction that prevents strain from being imposed on the king bolt. The wheels are mounted on roller bearings in hardened and ground steel sleeves. Pressure lubricating fittings are standard. Plate dimensions are a little over 7 by 5 inches. Overall height is 7⅝ to 12½ in. for the range of available sizes.

BREVITY—Identify by IEN - 3369 If you write the maker

WATER TREATING . . Liquid material supplied following analysis of water

Source: WARREN REFINING & CHEMICAL CO.
748-52 Prospect Ave., Cleveland 15, Ohio

List price is 22 to 24 cents per pound

Luminite trade names new water-treating material for addition to the water fed to a boiler to prevent new scale formation and to gradually eliminate any scale previously present. The material is supplied in liquid form following a field survey of the equipment involved and analysis of the feed water. Initial application is followed by the company.

The survey and analysis are free and involve no obligation. The material is packaged in 15, 30 and 55-gal. drums weighing 175, 350 and 630 pounds.

BREVITY—Identify by IEN - 3370 If you write the maker

CALCULATING . . Adding machine registers upon depressing the keys

Source: PLUS COMPUTING MACHINES, INC.
35-39 Murray St., New York 7, N. Y.

Rapid Adder is a new machine of foreign make now available on the United States market. It is backed with servicing facilities and a present five-year supply of spare parts. The machine provides immediate registration in the answer dials as keys are depressed on the keyboard. The usual operating lever and the printing tape have been eliminated. The machine measures about 9 by 7 by 5 inches and weighs 8¾ pounds. It lists at $150 plus $9 Federal Excise Tax.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3371 If you write the maker

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED "SCOTCH" TAPE · MASKS & STENCILS
W. H. BRADY COMPANY
3633 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 3372 If you write the maker

when the welder must wear a Hard Hat . . . give him a

CESCO Dual Protector

FOR Arc Welding

- Consists of choice of CESCO Helmets and Fiberglas Hat. Rustproof, adjustable, easy-tilt mechanism holds shield in any position. Spring clip connectors permit *fast, easy detachment* of shield from hat which can be worn separately.

FOR Gas Welding

- A combination of Model 542 CESCO *Speed-Shift* Goggles and Fiberglas Hat. Ball-and-socket mechanism for quick flipping of goggles onto hat or into position. Goggles can be flipped to top of hat when wearer does other work.

***NEW* CESCO DUAL SKULL AND EYE PROTECTORS**

FIBERGLAS HAT with CESCO Helmet or No. 542 Goggles. Completely adjustable units. Hat is light and cool . . . safer than stainless steel . . . waterproof. Can be worn separately. ***Write** us for literature today.*

CHICAGO EYE SHIELD CO. • 2326 Warren Blvd., Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 3373 If you write the maker

For efficient heat transfer "Ro-Fin" Tubes

There are nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING in production! Available in straight length, coils, or U-bends . . . with or without threaded end connections . . . or to be used with standard flare connections. "Ro-Fin" Tubes for efficient heat exchange are used and specified by nearly all large nationally known manufacturers!

For refrigeration condensers • fluid recovery condensers • diesel engine cooling • concealed radiation convectors • steam condensers • fan-type unit heaters • all heat transfer work

Write for information on your heat transfer problems:

ROME TURNEY RADIATOR COMPANY

200 East Front Street • Rome, New York

BREVITY—Identify by IEN - 3374 If you write the maker

PUMP THESE LIQUIDS

Acids	Linseed Oil
Ammonia	Lime Water
Asphalt	Lye
Alcohol	Lubricating Oils
Brines	Milk
Benzine	Molasses
Bleaches	Naphtha
Blood	Mineral Oils
Cream	Olive Oil
Chocolate	Paints
Caustics	Paint Oils
Chemicals	Petroleum
Coal Tar	Pitch
Creosote	Plastics
Dishwater	Printing Inks
Drugs	Road Oils
Dyes	Soap Liquors
Ether	Starch
Fuel Oils	Sizing Liquids
Food Products	Soy Bean Oil
Gasoline	Syrups
Glycerin	Tar
Glue	Tomato Juice
Glucose	Turpentine
Grape Juice	Varnish
Hot Oils	Vegetable Oils
Juices	Viscose
Kerosene	Water
Lacquer	Wine
Lard	Yeast

VIKING

The Pump That Is SO RIGHT for SO MANY Pumping Jobs

The fast, self priming . . . the positive, steady discharge . . . the adaption to thin or viscous liquids, makes the Viking pump SO RIGHT for SO MANY pumping jobs.

The many sizes are built in a multitude of models and styles. Each is designed for the particular pumping job. It is built to meet your requirements, completely.

Learn more of these outstanding facts. Send for your free copy of bulletin 515F today.

Fig. 12

VIKING AN HONORED NAME IN PUMPING

Viking PUMP COMPANY Cedar Falls, Iowa

BREVITY—Identify by IEN - 3375 if you write the maker

TOOLAGRAM

Factory production and maintenance can be speeded with rugged, long-life PROTO power and impact sockets. The recently expanded line includes many sizes and types.

Our smart Adjustabull's bellowing that men who really *know* tools prefer PROTO. Experts *know* that PROTO uses special alloy steels, proper forging, scientific heat treating, tested designs. Demand PROTO *professional* tools.
Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2271L Santa Fe Avenue
Los Angeles 54, Calif.

5186

PROTO TOOLS LOS ANGELES

BREVITY—Identify by IEN - 3376 if you write the maker

Better rubber products are made with Du Pont NEOPRENE

Resilient neoprene standing mat is easy on the feet...withstands oils, grease, abrasion

To provide maximum foot comfort for standing workers, this ribbed mat was made of neoprene. The resilient ribs are strong enough to support a man's weight, but flexible enough to act as effective shoe scrapers. Neoprene was specified because of its ability to withstand rough treatment in the plant. Here it must stand up under constant exposure to machine oil, cutting and chipping from sharp metal scraps, or scuffing by heavy work shoes. What's more, neoprene will not propagate flame, and is unequaled in its aging characteristics.

Resilient products made of dependable Du Pont neoprene are used in many fields. Wherever severe conditions, such as exposure to sunlight, heat, moisture and weathering, must be met, neoprene has proved its outstanding superiority. Leading rubber goods manufacturers, familiar with neoprene's outstanding properties, use it for their finest products. While Du Pont makes no finished goods of neoprene, your rubber goods manufacturer or distributor will gladly tell you about neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-4, Wilmington 98, Delaware.

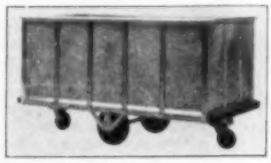
Tune in "Cavalcade of America," Tuesday nights—NBC coast to coast

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 3378 if you write the maker

TRUCK . . Four wheel box unit, stainless steel, for dyeing, finishing

Source: MARKET FORGE CO.
23-27 Garvey St., Everett 49, Mass.



Capacity is one-ton and inside dimensions are 72 by 36 by 28-in. in this new stainless-steel four-wheel hand truck. It has been designed particularly for use in handling wet materials as in dyeing and finishing operations. The bottom of the truck is high in the center to promote flow of liquid to side openings. The sides, ends and top edge are reinforced. Rubber bumpers are supplied on the ends.

The wheels are equipped with roller bearings and cushioned rubber tires. They can be specified in plastic, semi-steel or neoprene. Diameter of the center wheel is 12 in. and of the end casters is 6 inches. Casters are swivel design.

BREVITY—Identify by IEN - 3379 if you write the maker

FASTENING . . Socket head screw in special design for aircraft use

Source: BASSONITE CORP.
749-53 N. Summit St., Dayton 7, Ohio

Has been tested by Air Material Command, Dayton

Internal Wrenching bolt designates special fastening made of steel which the company is now prepared to supply for aircraft to meet specifications set up by National Aircraft Standards Committee. The bolt has a round tapered head with a hexagon socket. The head carries a large radius in connection to the shank. The steel is specified for tensile strength between 160,000 and 180,000 lb. per square inch.

Sizes range from ¼ to 1 in. nominal, each dimension being specified in thousandths. Shank length is $\frac{5}{16}$ to 8 in. on the smallest size and 1⅝ to 8 in. on the largest. Greatest head diameter is nominally $\frac{7}{16}$ to 1⅝ inches.

BREVITY—Identify by IEN - 3380 if you write the maker

POLISHING . . Portable electric tool, disc type, also sands, grinds, drills

Source: CUMMINS PORTABLE TOOLS
4738-42 Ravenswood Ave., Chicago 40, Ill.

Operation is at 1,800 rpm., on free speed, for this new portable electric angle-type tool. It is shown with a 6-in. disc and wool pad for polishing work. It can be equipped with a disc for sanding or grinding or with a spindle to take grinding wheels or a chuck for drill shanks. Weight is 4¼ pounds. Operation is on 110-volt ac., or dc. Drilling capacity is to ¼ in. in steel, ½ in. in wood. It will drive a ⅜-in. carbide-tipped drill in masonry.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3381 if you write the maker

A Lot More for Your Glove $

in this New Extra-Duty Safety Line of **PIONEER STANZOIL** RED NEOPRENE

Coated Canvas Gloves

Exclusive Pioneer Non-Slip Grip Holds wet things as if dry.

Curved Fingers Extra comfort and efficiency.

Preflex-Palm Design Prevents wear from bunching.

Inserted Thumb Design No inside seam to wear through quickly.

Heavy Red Neoprene Coating Liquid-resistant, durable.

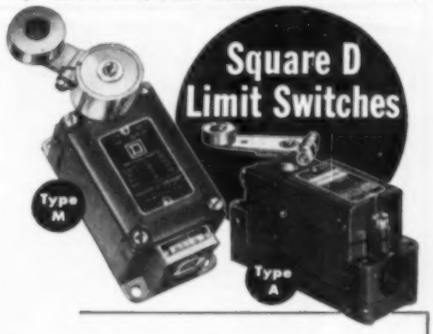
Entire Glove is full weight 8 oz. canton flannel Comfort, long wear.

Compare these new safety red neoprene coated canvas gloves with any others anywhere and you see the extra hand protection, extra wear, extra durability in oils and acids, extra work and efficiency only STANZOILS give you. For less cost-per-hour, more work-per-day, write for full information about these Extra-Duty STANZOIL neoprene coated canvas gloves, today. *The Pioneer Rubber Company, 635 Tiffin Road, Willard, Ohio.*

STANZOIL PIONEER

OVER *30 Years* OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN - 3382 if you write the maker



for Machine Tool Service

Class 9007 Type A—small precision switches with variety of roller arm or push rod operating mechanisms—flush or surface mounting. Accurate snap switch action.

Class 9007 Type M—heavy duty switches with accurate, quick-acting latch mechanism. Variety of operating arms—double break silver contacts—accessible terminals—long life. ***Write** for Bulletins 9007A and M. Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin.*

Ask Your Electrical Wholesaler for Square D Products

SQUARE D COMPANY
DETROIT · MILWAUKEE · LOS ANGELES

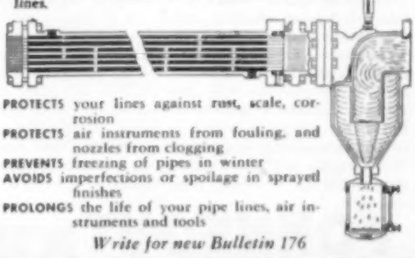
BREVITY—Identify by IEN - 3383 if you write the maker

You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons 1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condense and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 319 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 3384 if you write the maker

IT NEVER SEEMS TO HAPPEN ON SUNDAY!

Power cable failure always happens at the very worst time—during a rush job or a crucial contract when the load is at a peak! That's when outages are *really* costly.

Okolite-Okoprene electrical cable is the nearest thing there is to a guarantee against cable failure. Okonite's exclusive processing of the conductors, insulation, and Okoprene Sheath guards against *every* harmful condition encountered in an industrial plant: oil, acid, alkali, moisture, flame, weather, and prolonged severe service.

Overhead or underground, on control circuits, as apparatus leads, for power and lighting circuits—durable Okolite-Okoprene is the one industrial power cable that stands out above all others for long, trouble-free life. Write for Bulletin IE-2051B tells how to eliminate 11 causes of cable failure in industrial plants. The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE *insulated wires and cables*

8834

BREVITY—Identify by IEN - 3385 if you write the maker

SYNTRON

Pulsating Magnet

ELECTRIC VIBRATORS

With Variable Control of Power

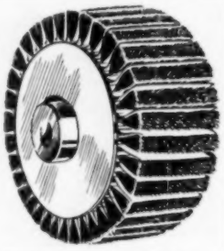
3600 controllable vibrations per minute keep even the most stubborn materials flowing freely thru bins, hoppers, chutes and screens . . . of any size . . . WITHOUT THE HAMMERING AND RODDING AND POKING THAT WASTES MANPOWER AND DAMAGES EQUIPMENT.

Write to—

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 3386 if you write the maker

THIS MAY BE THE ANSWER TO YOUR FINISHING PROBLEM!



It's the Vonnegut Brush-Backed Polishing Head — a specially designed "wheel" containing 32 strips — 48 lineal feet — of abrasive coiled on a center spool. The abrasive ends extend outwardly between adjacent pairs of the 32 replaceable brushes. In operation, the brush bristles "yield" under workpiece pressures, forcing the abrasive into contact with all parts of curved, contoured and other odd-shaped surfaces. Using the proper grit and grade of abrasive — for cutting, smoothing or finishing — you may find that this versatile tool is just what you've been looking for. Write for Polishing Head folder.

VONNEGUT MOULDER CORPORATION
1827 MADISON AVENUE • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 3387 if you write the maker

Free Booklet

Gives you the inside facts on amazing multi-purpose thermostat

Find out *now* how Fenwal THERMOSWITCH Units can give you unique control of heat, humidity, vapor level, radiant heat, pressure and other variables. See how single-metal shell expands or contracts *instantaneously* with temperature changes, making or breaking totally enclosed electrical contacts. Fast, accurate, sensitive . . . and low in cost.

Fenwal THERMOSWITCH®
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE...*but only to heat*

MAIL TODAY

FENWAL, INC., 74 Pleasant St., Ashland, Mass.
111 South Burlington Ave., Los Angeles 4, Cal.
Temperature Control Engineers

Please send me the Fenwal booklet "Everything you want in a thermostat."

Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 3388 if you write the maker

TESTING . . Density indicator for continuous reading in moving liquid

Source: PRECISION THERMOMETER & INSTRUMENT CO.
1400 Brandywine St., Philadelphia 30, Pa.

Pyrex glass cylinder forms the main housing of this new direct-reading model in the company's Densitrol line of instruments for indication, recording and control of specific gravity or liquid density. The cylinder is assembled in mounting flanges top and bottom. It encloses a pyrex-glass plummet or one made of stainless steel and an anchoring chain of platinum, tantalum or gold to meet given requirements. A scale is marked on the body and is read across a single reference line on the plummet. Scale length is 5 inches. Fluid connects at the bottom to fill the cylinder, submerging the plummet. It flows out at the top and back to a connected line. The instrument and its connections form a by-pass in a main line or vessel.

The chain that weighs the plummet is designed and anchored so the plummet will assume an equilibrium position in the liquid with the chain about equally supported between the plummet and the reference point. Rising density increases buoyancy, causing the plummet to rise until added chain weight results in equilibrium in a new position.

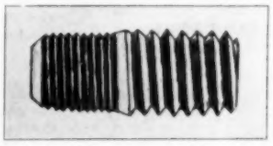
The action is without friction. The plummet rides in the center of the cylinder and does not tend to move toward the outer wall. Change in position is sensed by an electric coil and the circuit leading to any standard indicating, recording or control equipment. This equipment can be located at distances to 250 ft. away without particular precaution.

Operation is on 110 or 220-volt, 25 to 60-cycle ac. Range limit is .2 to .005 density, or equivalent full scale change within the limits of .5 to 3.5 density or equivalent. Maximum operating pressure is 125 lb. with maximum temperature at 300 deg. C. Connections range in size from ¼ to 2-in. pipe.

BREVITY—Identify by IEN - 3389 if you write the maker

FASTENING . . Combination stud to close openings in pressure vessels

Source: DONEAR PRODUCTS CO.
1521-25 Huffman Blvd., Rockford, Ill.



Self-Seal is a new stud with a pipe thread on one end to screw into a tank shell and with a straight thread on the other end to take a nut that will hold a cover-plate in place. The pipe thread seals its opening and a flat gasket under the plate completes the job.

One stock size is 1 in. in length with ½-in. pipe thread and 7/16-14 straight thread. A hexagon socket is provided in the straight-thread end for initial stud installation or a stud driver can be used for this purpose.

List price is about $16 per hundred. Other sizes can be specified between ⅜ and ⅞ in. on the straight end and between ⅞ and 3 in. in overall length. Material is alloy steel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

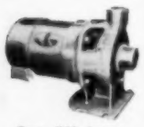
BREVITY—Identify by IEN - 3390 if you write the maker

Small Capacity • Medium Duty
SIDE SUCTION PUMPS

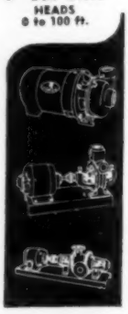
Close-Coupled • Flexible Coupling • Belt Drive

CAPS 5 to 75 G.P.M. — HEADS 0 to 100 ft.

Ideal as part of Equipment Manufacturer's product, such as, air conditioning units, cooling towers, evaporator coolers, milk coolers, hot water circulators, etc. — and general service. Speeds 1750 to 3500 R.P.M.



Type JMC Aurora Close-Coupled Pump



DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS — AURORA PUMP COMPANY
52 Loucks Street, Aurora, Illinois

BREVITY—Identify by IEN - 3391 if you write the maker

NO SPRINGS TO BREAK in the Nutting JACK
IT'S ALWAYS DEPENDABLE

The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service.

One lift truck and two dead skids cost about the same as two *Nutting Jacks and twelve semi-live skids.* That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. Material stored on semi-live skids is made mobile in a hurry. The jack may be coupled to one skid, then uncoupled and coupled to another faster than the time it takes to tell about it.

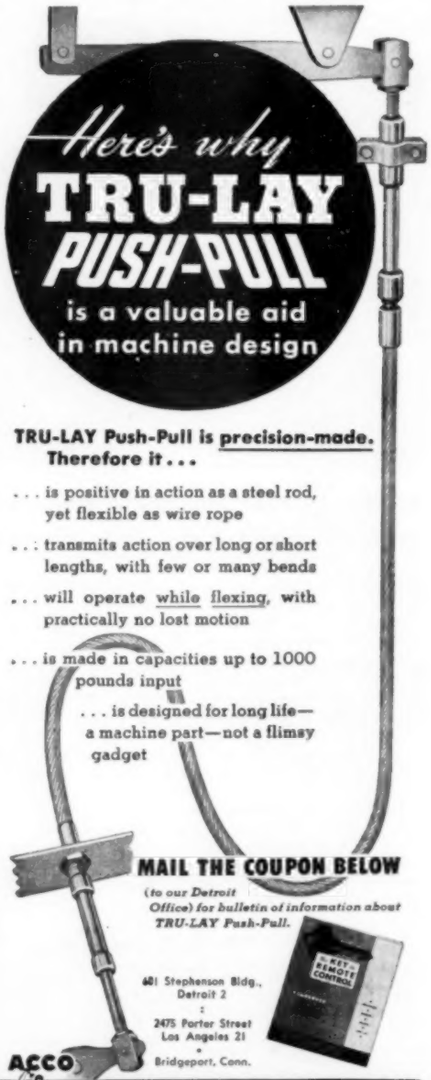
Send for Bulletin 48-JS

Look in your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. It will pay you to get all the facts on this superior Nutting Jack-Skid handling system.

Nutting makes everything in floor trucks, wheels, casters.

NUTTING TRUCK AND CASTER COMPANY
2012 Division Street Faribault, Minnesota

BREVITY—Identify by IEN - 3392 if you write the maker



TRU-LAY Push-Pull is precision-made. Therefore it . . .

. . . is positive in action as a steel rod, yet flexible as wire rope

. . . transmits action over long or short lengths, with few or many bends

. . . will operate while flexing, with practically no lost motion

. . . is made in capacities up to 1000 pounds input

. . . is designed for long life — a machine part — not a flimsy gadget

MAIL THE COUPON BELOW

(*to our Detroit Office*) *for bulletin of information about TRU-LAY Push-Pull.*

681 Stephenson Bldg., Detroit 2
2475 Porter Street Los Angeles 21
Bridgeport, Conn.

ACCO
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

Please send me copy of descriptive bulletin DH-87-E-1.

Name .....
Company Name .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 3394 if you write the maker

Need an "Information Center" in your plant? . . .

. . . Get it with VEEDER-ROOT COUNTERS

Every production machine *you use* can be made to "report to headquarters" . . . by flashing figures a few feet or many miles to Veeder-Root Magnetic Counters group-mounted on a central board.

And every machine or product *you make* can be made to *count for more* . . . both for you and your customers . . . by Veeder-Root Counters built-in as original equipment. Find out how. *Write:*

VEEDER-ROOT INC., Hartford 2, Conn.

Montreal, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

BREVITY—Identify by IEN - 3395 if you write the maker

hose and duct clamps to fit special needs

Ordinary run of the mill hose clamps don't fill the bill for many applications with specialized or exacting requirements. Marman Clamps are engineered to fit particular needs.

For all around use . . . varying sizes and shapes . . . Marman Universal Clamps are the answer. Continuous band design for easy installation and wide size adjustment . . . stainless steel for strength and corrosion resistance . . . self locking swivel nut for resistance to vibration . . . can be used again and again.

For extra strength . . . Marman T-Bolt Clamps' exclusive features provide even circumferential take-up, assure an efficient seal.

For fast assembly and disassembly . . . Marman Quick Coupler Clamp patented snap on latch makes it go on or off in an instant. Particularly suitable for removable equipment, accessories and ducts.

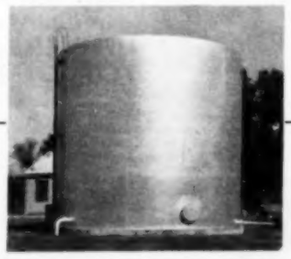
Our catalog tells more . . . just write Dept. I-3

MARMAN PRODUCTS CO. INC. 940 WEST FLORENCE AVENUE INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 3396 if you write the maker

BETTER WATER SERVICE

Whether it's for drinking, fire protection or processing, an independent water supply is your plant's guarantee of more dependable service. Horton welded steel reservoirs provide a reserve of water most economically for any use. When requesting quotations, state capacity required, dimensions and location.



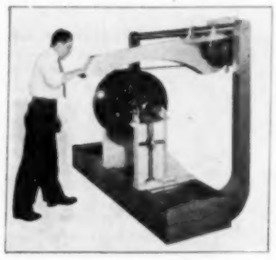
Welded steel tank at the Transcontinental Pipe Line Company's, McManus, Louisiana, pumping station.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 3397 if you write the maker

BALANCING . . Dynamic machine rotates shaft mounted elements for test

Source: INDUSTRIAL ENGINEERING EQUIPMENT CO.
120-26 E. 4th St., Davenport 2, Iowa



Wagner Universal is a new machine in which to mount equipment elements, such as the shaft mounted rotor for a motor or generator, and to set it in motion on ball-bearing rollers to determine the position of dynamic unbalance in order to add corrective weights. The machine will take assemblies to 48 in. in diameter and to 80 in. between its vertical uprights. It measures 96 by 54 by 72 in. and is in welded assembly.

Rotating drive is provided by a 5-hp. motor and a set of five V-belts mounted in an arm that pivots on a horizontal tube at the top of the housing. The arm is balanced so it stands normally in "up" release position. It is brought down by the operator until the driving belts contact the equipment to be rotated. Then a "start" button is pressed. When desired speed has been obtained the arm is released. While rotation continues the operator marks the shaft with chalk or a pencil.

Any unbalance will cause the shaft to rotate outside of its center so the mark will appear on one side only to indicate where corrective weight is required. When the marks have been made and rotation is to be stopped, the belt arm is brought down again into contact and a reverse button is pressed. Then motor and belts will oppose further movement. Weight capacity is 4,000 pounds.

BREVITY—Identify by IEN - 3398 if you write the maker

PRESS . . Motor driven machine takes removable bed or work holding horn

Source: KENCO MFG. CO.
5209 Anaheim-Telegraph Rd., Los Angeles 22, Calif.

Rating is 4 ton. Stroke is 1 or 1¼ inches. Throat dimension is 12¾ in. in this new 4-in-1 punch press. The bed casting mounts a 7 by 10-in. bolster plate. The casting itself is bolted to the frame so it can be positioned for either 6⅞ in. or 9⅞ in. of vertical height from the bolster plate to the ram. When the bed has been removed a 2⅝-in. horn can be inserted in a hole provided for it in the frame. The press is equipped with base brackets to mount on a bench. Legs are available also for floor erection.

Operating speed is normal at 285 strokes per minute. The flywheel weighs 50 lb., measures 12 by 2 inches. The drive calls for a ½-hp. motor. Bench space measures 25 by 15 inches. Overall height is 32½ inches. Ram area measures 3¼ by 5 inches. The ram carries a 1¼ in. center hole for tool shanks. Adjustment is through 1 inch. The trip mechanism can be set for non-repeat or continuous action.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3399 if you write the maker

Announcing
A BRAND NEW HOME for
B. F. McDONALD CO.
★ New Location ★ New Facilities
★ Enlarged Capacity

Here's our new home—more than twice the size of our old plant and built to assure you that McDonald safety products will be available in the increased quantities that your growing preference demands. It's a fitting tribute to the firm with 19 years of safety-on-the-job progress.

note change of address

B. F. McDONALD CO.
5721 West 96th St.
LOS ANGELES 45
The West's Safety Headquarters

HOME OF THE SAFETY STARS FOR 1951
McDonald SAFE-T-HAT • McDonald DUSTFOE RESPIRATOR
McDonald KANISTER-KIT
McDonald SURE-WELD LENS
McDonald REVERSALAEM • McDonald SNAKE-BITE KIT

BREVITY—Identify by IEN - 3400 if you write the maker

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

BREVITY—Identify by IEN - 3401 if you write the maker

"We Were Losing 5 Kiln Motors per Month Until We Changed to FUSETRON Dual-Element Fuses."

"Two-and-a-half years ago I started to protect my dry kiln motors with Fusetron fuses. Until then we were losing about 5 motors a month because to pick up the load I had to fuse them too heavy and when something went wrong they burned up.

"Kiln motors are 1½ hp. 5 a., and I have about 800 hp. Now I use 5 amp. Fusetron fuses to protect them. They hold the starting load and if something goes wrong they blow to keep the motor from burning up.

"Since changing completely to Fusetron fuses for motor protection my trouble has been very light."

Malvin E. Adams, Electrician
Ozark Hardwood Co., Clarksville, Ark.

Fusetron Dual-Element Fuses

Give 10 Point Protection

1 *Protect against short-circuits.
2 Protect against needless blows caused by harmless overloads.
3 Protect against needless blows caused by excessive heating — lesser resistance results in much cooler operation.
4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
5 Protect motors against burnout from overloading.
6 Protect motors against burnout due to single phasing.
7 Give DOUBLE burnout protection to large motors — without extra cost.
8 Make protection of small motors simple and inexpensive.
9 Protect against waste of space and money—permit use of proper size switches and panels.
10 Protect coils, transformers and solenoids against burnout.

*Fusetron Fuses have high interrupting capacity as shown by tests of the Electrical Testing Laboratories of New York City.

Don't risk losses in your plant!

One **needless** shut down, one **lost** motor, one **destroyed** panel or switch, one **burned out** solenoid— May cost you more than replacing every ordinary fuse with a FUSETRON dual-element fuse. Protect yourself by installing them in every set of fuse clips throughout the entire electrical system.

BUSSMANN MFG. CO.,
Division of McGraw Electric Co.
University at Jefferson
St. Louis 7, Mo.

Sold Through Wholesalers

BREVITY—Identify by IEN - 3403 if you write the maker

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-50.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

BREVITY—Identify by IEN - 3404 if you write the maker

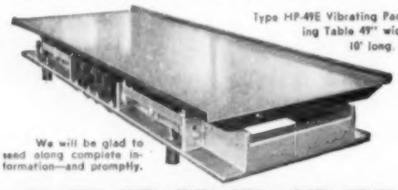
Low head Barrel Packer

VIBRATING PACKERS

Jeffrey electric vibrating Packers provide real economy in packing operations.

Reduce size of containers. Increase their capacity Cut shipping costs

As shown, Jeffrey Packers can be supplied with various diameters of platen head to take barrels, cartons, etc., or with vibrating deck to provide conveying action during the packing operation. They are well built and sturdy—will give years of satisfactory service.



Type HP-49E Vibrating Packing Table 49" wide, 10' long.

We will be glad to send along complete information—and promptly.

JEFFREY

ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 N. Fourth St., Columbus 16, Ohio

BREVITY—Identify by IEN - 3405 if you write the maker

Since 1887

MILWAUKEE WROT WASHERS

Better WASHERS ...Competitively Priced

Large volume production, the most advanced methods and facilities, plus more than 60 years of continuous experience in the manufacture of Washers, are factors that enable us to offer you top quality washers and stampings at competitive costs. Over 22,000 sets of dies for making Washers of every type (Standard and Special), from every type of material, for every purpose, in any finish. STAMPINGS of all descriptions; Blanking, Forming, Drawing.

Submit your blueprints and quantity requirements for estimates.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2397 S. BAY ST., MILWAUKEE 7, WIS.

BREVITY—Identify by IEN - 3406 if you write the maker

FASTENINGS . . Star wheel, knob and flanged nuts available from stock

Source: NORTHWESTERN TOOL & ENGINEERING CO.
115-19 Hollier Ave., Dayton 3, Ohio

The company has added cast-iron star wheels and knobs, in a range of center-threaded sizes from ¼ to ¾ in., to its line of stock fastenings for product jig and fixture use. Both are finished in black penetrate to protect against corrosion. The line also includes a hardened steel nut in sizes from $\frac{1}{16}$ to 1 in. for replacement of separate nuts and washers commonly used on jigs and fixtures.

BREVITY—Identify by IEN - 3407 if you write the maker

WELDING . . Inert arc electrode for mild and stainless steel, copper

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Lengths 3 to 24 in.
.04 to .25 in. diam.

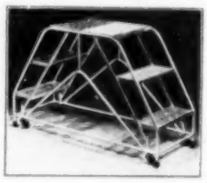
Hi-Thoria is a new tungsten electrode for dc. inert-arc welding using either argon or helium gas. The new electrode produces a stable arc, resists contamination by the weld metal and multiplies life in service by as much as ten times over previous tungsten electrodes made by the company. Strength is comparable to standard pure tungsten.

The material runs cooler than standard tungsten and does not become molten. The arc remains at the end of the electrode, does not climb up the side on low current. Touch starting is accomplished on current as low as 5 amperes. The material is not suited as a standard tungsten replacement for reverse polarity dc., for ac., or for atomic-hydrogen welding.

BREVITY—Identify by IEN - 3408 if you write the maker

LADDER . . Wheel mounted assembly, three steps to 30 in. above floor

Source: BALLYMORE CO.
137-41 Pennsylvania Ave., Wayne, Pa.



Model 3-SA is a new tubular frame and metal-tread assembly mounted on four casters with spring support. It rides free from the floor in unloaded position. Stepping on any tread compresses the springs above the casters and brings rubber feet into contact with the floor to hold the ladder against movement while it is in use supporting a load.

Overall height is 30 inches. Width is 17½ inches. Length is 48 inches. The top step has a 20-in. tread. The others measure 7 inches. Finish is in aluminum paint.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

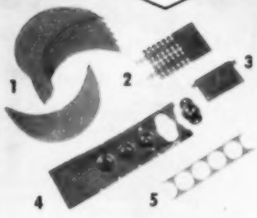
BREVITY—Identify by IEN - 3409 if you write the maker

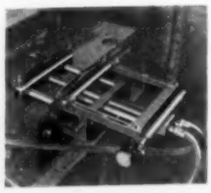
Feedmaster Automatic Air Feed

FEEDS THEM ALL

and switches jobs in minutes alone!

1) Feeds 12 layers of cardboard per stroke.
2) Feeds steel strip to piloted multi-stage die making thumb tacks.
3) Feeds slippery, oily nickel-plated steel to .002" without pilots.
4) Feeds steel through 4-stage die without piloting.
5) Feeds long thin fibre strips without pilots.





NO MORE TEDIOUS SET-UPS—just space stock guides, adjust jaw clearances and rotate micrometer dial to obtain exact stroke length; varies stroke in .001" increments. No wasted set-up time, no more slow costly hand feeding! Handles material from foil to two by fours! Costs only ⅓ usual price—IMMEDIATE DELIVERY! WRITE FOR DETAILS!

GREAT WESTERN TOOLS, INC.
3304 N. San Fernando Blvd. Burbank, Calif.

BREVITY—Identify by IEN - 3410 if you write the maker

EXACT WEIGHT Scales for Defense Work . . .

During World War II thousands of EXACT WEIGHT Scales were used by industry in general for precision weighing in hundreds of metal working operations. These operations, to mention but a few, covered selection of mass produced parts, counting of parts, balancing and final inspection. Other large operations were for shell loading and checkweighing of small and medium projectiles. If you have such operations now or for the immediate future do this now. Advise us promptly what your operation is and give as full details as possible. Many of these operations call for (1) special work on our part (2) getting scarce materials, both of which can seriously delay this vital equipment when you need it most.

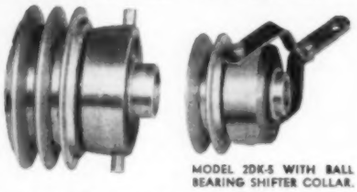
EXACT WEIGHT SCALES
Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 3411 if you write the maker

"ball-lok"
V-Belt Clutch

Clutch News to Interest Shop Superintendents or Machine Designers!



MODEL 2DK-5 WITH BALL BEARING SHIFTER COLLAR.

MODEL 2DK-5 with ball bearing shifter collar is being widely adapted to driving equipment with a high rate of off-and-on engagements per hour. The "Ball-lok" V-Belt Clutch has become the practical solution to such intermittent duty in many industrial machines. Knitting, winding, paper conversion and packaging machines are just a few of the typical units on which "Ball-loks" are serving effectively. WRITE FOR OTHER "BALL-LOK" MODIFICATIONS TO FIT UNUSUAL DRIVE PROBLEMS.

"BALL-LOK" CLUTCHES SOLD COAST-TO-COAST. RECOGNIZED AS STANDARD EQUIPMENT IN POWER TRANSMISSION FIELD.

Write for your copy of the Illustrated "V-Belt Roundup."

V-BELT CLUTCH CO. 418 N. Western Avenue Los Angeles 4, California

BREVITY—Identify by IEN - 3412 if you write the maker

STOP COSTLY Upper Cylinder WEAR with the UNIVERSAL TOP OILER

Used on all internal combustion engines except diesel. Atomizes top cylinder oil and distributes it evenly to upper cylinder area. Stops excessive piston, ring, and cylinder wear caused by insufficient upper cylinder lubrication. Frees sticky valves, prevents gum formation, reduces oil and gas consumption. Quickly pays for itself because of lower repair bills and better engine performance. Furnished complete—installed in 30 minutes with easy-to-follow instructions. Approved by leading top oil marketers.

Only $8.95 Postpaid

Best Top Oiler Buy AT ANY PRICE

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue, Oakmont, Pa.

☐ Send UNIVERSAL Top Oiler at once. ☐ Send literature.

Name _____ Title _____
Company _____
Address _____
City _____ State _____

BREVITY—Identify by IEN - 3413 If you write the maker

MULTICLONE Collectors offer unusual advantages in compactness and adaptability to the space limitations of industrial plants. They save space four ways . . .

1. Greater Compactness: The MULTICLONE unit itself requires less space—as little as 1/6 the floor space of comparable equipment.

2. Maximum Flexibility: MULTICLONE inlet and outlet hook-ups are readily adaptable to meet individual requirements. Side-inlet side-outlet . . . side-inlet top-outlet . . . and even top-inlet side-outlet construction is available for fitting cramped spaces.

3. Simple Duct Requirements: In contrast to the complicated ducts of conventional cyclones, the MULTICLONE requires only *one* simple inlet and outlet duct. Saves headroom, saves space.

4. Fits Cramped Spaces: Even the *shape* of the MULTICLONE can be varied to meet specific space needs . . . long and narrow, square, or short and wide!

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & SUPPLYING

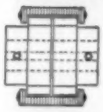
Main Offices: 1013 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

Besides compactness there are many other MULTICLONE advantages. For further details send for descriptive MULTICLONE booklet!

BREVITY—Identify by IEN - 3414 If you write the maker

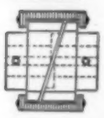
TWO TYPES
FOR LIGHT AND HEAVY DUTY

RAMSEY FLEXIBLE COUPLING



STRAIGHT TYPE

For light loads to 300 HP capacity in eleven sizes from ½" bore. Simple, compact design with steel pinions cut straight and chain acting as flexing member. Easily installed, aligned and disconnected.



DIAGONAL TYPE

For loads up to 600 HP in speed ranges to 3600 R.P.M. in ten sizes from ½" bore. Rugged design and construction features steel pinions cut diagonally to allow use of full width of chain under tension.

Write Today for "THE COUPLING BULLETIN"

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 3415 If you write the maker

FOAM RUBBER

Sheets • Flat Stock • Cored

We can furnish to specification from 1/8 to 1½ inch sheets up to 75 inches in length.

We also can supply die cut shapes and laminated products to specification.

TYPES

Soft — Medium — Firm

Write for free sample . . . outlining your needs and specifications. Also available in neoprene foam.

MARKEL PRODUCTS COMPANY
892 LORIMER AVE. BROOKLYN, N. Y.

BREVITY—Identify by IEN - 3416 If you write the maker

HEATING . . Portable electric unit circulates hot and cold water to dies

Source: STERLING INC.
3744 N. Holton St., Milwaukee 12, Wis.

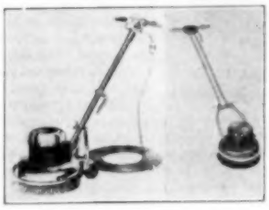
Duplicate water tanks are mounted in the main housing of this new portable electric mold-temperture control unit, Model 6002. The tanks are equipped with immersion heating elements, thermostats, thermometers, and circulating pumps. Connections at the back of the housing provide for ½-in. hose lines leading to and from the molds in a plastic-forming press. Connections also are provided with modulating temperature-control valves to circulate cooling water through the molds. Pressure at the source for this water maintains flow, the pumps being employed in hot water circuit only.

The electric elements rate 9,000 watts each and connect from a 3-phase, 60-cycle, 220 or 440-volt ac. power line. The circulating pumps are driven by direct-connected ball-bearing single-phase motors for operation on 220-volt, 60-cycle ac. An air-cooled transformer is supplied when the elements are applied on a 440-volt line. Pump rating is approximately 5 gpm. each through a 30-ft. length of ½-in. hose. Heating-control range is 60 to 210 deg. F. Cooling-control range is 80 to 170 deg. F. The unit measures 37 by 20 by 48 inches.

BREVITY—Identify by IEN - 3417 If you write the maker

CLEANING . . Rotary brush machine to scrub, sand, wax and polish a floor

Source: MULTI-CLEAN PRODUCTS INC.
2281 Ford Parkway, St. Paul 1, Minn.



New design carrying approval by Underwriter's Laboratories, Inc., is announced by the company for its all-purpose rotary-brush floor-cleaning machine. In addition a new design has been added, known as Lite 12, particularly for use on small floor areas. The improved machine is available in 12, 14, 16 and 19-in. sizes. It is driven by a capacitor-type motor for operation on 110 or 220-volt ac. Ratings in four sizes are ⅓ to 1 hp. Speed in each case is 1,725 rpm. Each machine is supplied with a 40-ft. length of extension cord and plug. Brush speed is 175 rpm. The machines weigh 75 to 121 pounds.

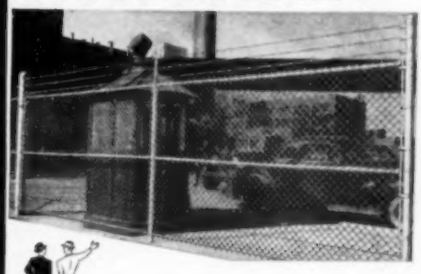
The new Lite 12 is powered by a ⅓-hp., 115-volt ac. constant-speed motor to drive the 12-in. brush at 175 rpm. This machine weighs 38 lb. including the brush and is equipped with a 30-ft. extension cord and plug.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

BREVITY—Identify by IEN - 3418 If you write the maker

PAGE FENCE - Since 1883

• AMERICA'S FIRST WIRE FENCE •



Defense against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 3419 If you write the maker

REDUCE HANDLING
of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed — without disturbing any other bin. *Stackbins*—individual hopper-fronted stacking bins, slide like drawers in *Stackracks* — individual units which lock together to form racks of any size, shape or capacity.

STACKBINS IN STACKRACKS

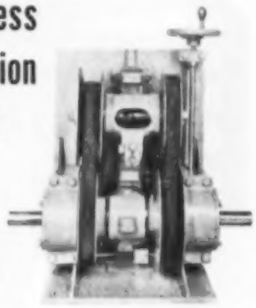
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 3420 If you write the maker

Wider Stepless Speed Variation
with less belt replacement



Now you can get instantaneous stepless speed control in minimum space and with assurance of minimum belt replacement.

The new Worthington ALLSPEED DRIVE uses a *tandem belt* arrangement rather than a single belt. Result—a wider range of speed variation, less belt wear (narrower belts mean less flexing and compression).

Sizes from 1-15 hp; up to 16-1 variation. Upright or horizontal frame. With built-in motor—or to be driven by belt, chain or gears.

Write for Bulletins: AS-1600-B3 and B4. Worthington Pump and Machinery Corporation, Allspeed Drive Sales Division, Holyoke, Massachusetts.

WORTHINGTON

AS1.5

BREVITY—Identify by IEN - 3421 If you write the maker

FRASSE for Aircraft Steels

Aircraft quality bars, tubes, and sheets in the grades listed below, all to Government specification, are standard stock items at Frasse:

Bars	Cold Drawn 4130	AN-QQ-S-684a and AN-S-684
Bars	Cold Drawn 4340	AN-QQ-S-756a
Bars	Cold Drawn 8740	AMS-6322
Bars	Stainless Type 347	46-S-18-Ba
Tubes	Cold Drawn 4130	AN-T-69 and AN-WW-T-850
Tubes	Cold Drawn 8630	AN-T-15
Sheets	Normalized 4130	AN-QQ-S-685
Sheets	Annealed 8630	AMS-6355c
Sheets	Stainless Type 347	AN-QQ-S-757

Chemical certification is provided with each shipment and Government inspection is arranged for where required. In addition, Frasse consulting technical service is always available to assist you in the application of these steels. For a quotation on your requirements, write:

Peter A. FRASSE and Co., Inc.

17 Grand St., New York 13, N. Y. 3911 Wissahickon Ave., Phila. 29, Pa.
50 Exchange St., Buffalo 3, N. Y. 157 Richmond Ave., Syracuse 4, N. Y.

BREVITY—Identify by IEN - 3422 if you write the maker

Can You Use SELF-LUBRICATING JOHNSON LEDALOYL BEARINGS?

IF SO, YOU WILL SAVE MONEY

NEW USES for these porous, oil-impregnated bearings are being discovered every month. You may need them for applications difficult to lubricate. They may even be sealed in place. Made by powder metallurgy, they are very low in cost. Johnson engineers will assist you in determining whether Ledaloyl Bearings can be used to advantage. Write today.

Johnson Bronze
SLEEVE BEARING HEADQUARTERS
476 SOUTH MILL STREET • NEW CASTLE, PA.

BREVITY—Identify by IEN - 3423 if you write the maker

on presses—printing frames—vacuum-back cameras—ATF uses GAST rotary air pumps

Like American Type Founders, you may gain real advantages by specifying Gast Rotaries as components of your products.

Consider this record: For 10 years, ATF has used Gast Air Pumps on their Vacuum-back Cameras and Printing Frames.

The result? Gast dependability and performance proved itself. Now ATF is using Gast Air Pumps on many Kelly-One and Little Giant Presses. In the graphic arts industry — and in many other fields — the trend to Gast continues.

When you have original equipment problems that might be solved with air, write Gast. "Air may be your answer!"

SEE OUR CATALOG in SWEET'S FILE

Gast Application Ideas booklet — showing 26 design problems solved — sent upon request.

Original Equipment Manufacturers for Over 25 years

GAST ROTARY — AIR MOTORS (TO THREE H.P.) · COMPRESSORS (TO 30 LBS.) · VACUUM PUMPS (TO 28 INCHES)
GAST MANUFACTURING CORP., 110 Hubbley St., Benton Harbor, Mich.

BREVITY—Identify by IEN - 3424 if you write the maker

EVERYTHING YOU WANT TO KNOW about wire rope or chain fittings

Find the right fittings — *right away* — with Laughlin's comprehensive Data-Book.

FREE! A valuable source of time- and money-saving information on wire rope and chain fittings, together with helpful tables and other data. You may find many fittings you've been having made up as "specials" listed as Laughlin standard items.

LAUGHLIN
THE MOST COMPLETE LINE OF DROP FORGED WIRE ROPE AND CHAIN FITTINGS

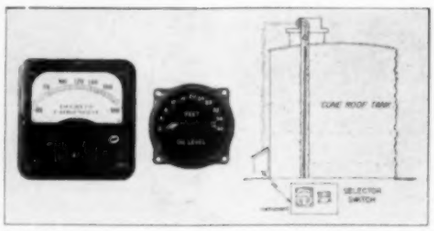
MAIL THIS TODAY . . . no cost or obligation

THE THOMAS LAUGHLIN CO.
14 Fore St., Portland 6, Maine
Please send Catalog Data Book #150 to:
Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 3425 if you write the maker

THERMOMETER . . Resistance equipment for average readings in liquid tanks

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.



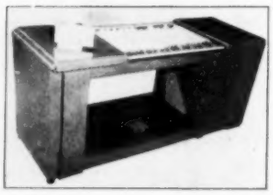
Electric meter and a level selector are enclosed in a housing to apply in connection with a flexible resistance-bulb assembly that positions inside a liquid storage tank to comprise this new resistance thermometer. It is known as Model 918 and is designed to provide average temperature readings in storage tanks for petroleum products. The reading is employed for measuring volume, shipping and billing.

Operation is on 6-volt dc. which can be supplied by dry cells or by a transformer and rectifier on a 110-volt ac. circuit. A reading can be taken in a few seconds. The meter can be supplied in any scale with a total span of not less than 100 deg. F. A standard range is from 0 to 120 deg. F. for non-heated stocks and from 60 to 180 deg. F. for heated liquids. Accuracy is within plus or minus 0.5 per cent.

BREVITY—Identify by IEN - 3426 if you write the maker

STORING . . Card file machine mounts card trays on enclosed conveyor

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.



Conve-Filer is a desk-type machine in which a motor-driven conveyor operates in a closed loop across the top, down or up the sides and across the bottom. The conveyor carries trays that will take nearly 200,000 cards measuring 2¼ by 3 inches. The operator is in seated position at one side and controls movement of the conveyor, to the right or left with reference to the table top, by depressing one or the other of two foot switches. The movement brings the card trays into position as they are required, eliminates necessity for the operator to move.

Overall dimensions are about 85 by 31 by 38 in. for the assembly to hold 2¼ by 3-in. cards. Other assemblies for 5 by 3-in. to 8 by 6-in. cards, or tabulating size cards, can be specified to meet requirements.

Bulletin, 8 pages, "Conve-Filer," presents detail information and shows various arrangements and applications.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See the classified listings in the index, page 114

BREVITY—Identify by IEN - 3427 if you write the maker

UNIVERSAL EXPANDED METAL FLOOR TRUCKS

MODEL 4-A
Length 60", width 30", height 30".

- Greater Economy
- Greater Utility

Literature Mailed Promptly Upon Request

MODEL 4-B
Length 60", width 30", height 48".

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters —swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

- Also other types of expanded metal containers in sizes and quantites to customer's specifications.

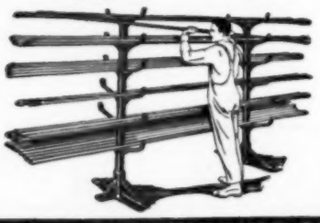
INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 3428 if you write the maker

SPEEDS UP STOCK-ROOM SERVICE

The BROWN TIME-SAVING RACK saves the time previously lost end-hauling each bar of stock its entire length from the old-style, closed-side Rack, the Brown Rack requiring but a few inches of side movement. Each length, width and thickness of stock is displayed in goldfish visibility for instant selection. Workmen waiting for stock are served without waste of time, and returned to their production machines to turn out a maximum of output. Any time you require additional storage space, all you need do is to add more units. If you want to relocate it at any time, you can do so for it is unattached to the building. It is a simple, durable artistic mode of metal in five styles. It can't burn, warp, sag or twist; depreciation is practically nil. SEND FOR BULLETIN No. 26-E DESCRIBING

BROWN'S *QUICK-SERVE* RACKS



BROWN ENGINEERING CO.
122 NORTH THIRD STREET READING, PENNA.

BREVITY—Identify by IEN - 3429 if you write the maker

Write for Catalog OF USES and SPECIFICATIONS

GENERAL Industrial Pneumatics

ADD THESE 6 SELLING POINTS TO YOUR PRODUCT

SAVE
• TIME • LABOR
• FLOORS

REDUCE
• BREAKAGE
• MAINTENANCE
• COSTS

Available in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

More AIR VOLUME • *More* STABILITY • *More* LOAD CAPACITY
DELIVERS *Long Mileage* IN HI-SPEED SERVICE

SEND FOR CATALOG . . . DEPT. 3

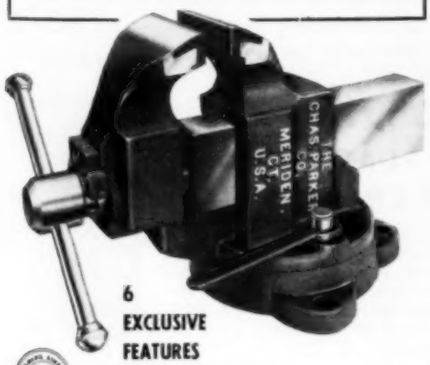
THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 3431 if you write the maker

PARKER VISES

Complete Line Including

HINGED PIPE VISES • WOODWORKERS' VISES



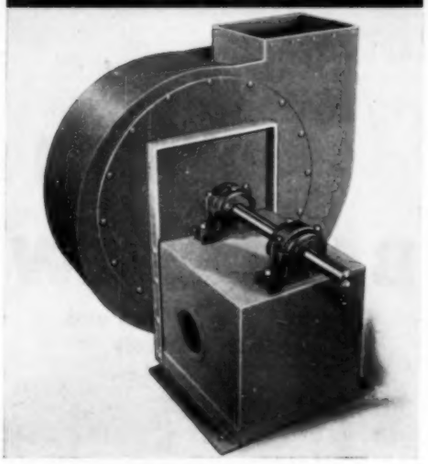
6 EXCLUSIVE FEATURES

Write for catalog
Sold 100% through distributors

THE CHARLES PARKER CO.
MERIDEN CONNECTICUT

BREVITY—Identify by IEN - 3432 if you write the maker

"VACUUM CLEANER" For Your Air!



"Buffalo" INDUSTRIAL EXHAUSTER

Here's the fan to "sweep out" the airborne grit, fumes, moisture and other impurities from your air efficiently and positively—all shift long. As the photo shows, construction is of heavy plate, all welded . . . a strong, durable unit.

Rotors, too, are all-welded, presenting a smooth interior surface—no rivets to cause resistance.

"Buffalo" Industrial Exhausters may be had with "AW" Air Wheels or "MW" Material Wheels, both interchangeable.

Put one of these "workhorse" fans on your removal job, and watch the dirt fly—out the discharge duct!

WRITE TODAY for Bulletin 3576, which gives complete construction data.

BUFFALO FORGE COMPANY
496 BROADWAY BUFFALO, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in All Principal Cities

BREVITY—Identify by IEN - 3434 if you write the maker

TACHOMETER . . Giant voltmeter, generator actuated to read rpm.

Source: DITTMORE & FREIMUTH CO.
2515-19 E. Norwich Ave., Cudahy, Wis.

Rotating speed for the table of a 30-ft. boring mill is read in either of two ranges between 0 and 7 rpm. and between 0 and .28 rpm. on this new Giant illuminated-dial electric meter. The unit mounts on one side of the boring-mill housing where it can be clearly read from considerable distances. Its 8½-in. pointer moves over a 20-in. dial made of translucent plastic and backed by a reflector holding two concentric circular neon tubes. As the machine operator switches from one of the two ranges to the other, one tube is extinguished and the other is lighted to clearly indicate the active scale.

The company is prepared to supply the meter for basic dc. voltage and current readings in any required terms such as movement, weight, temperature. In the case of the tachometer application the reading is based on the electrical output of a small generator connected to the boring-mill table and wound so its output voltage is proportional to speed in terms of rpm.

List price of the unit illustrated is $745. Price range is from $400 to $1,050 for the dc. equipment, depending upon specified assembly. AC. equipment is at present under development and is expected to be available on a comparable basis.

The meter is assembled in a steel housing and its movement is designed for 270 deg. of rotation. Mounting is on precision pivot ball bearings. Cable connection between the meter and the generator on the boring-mill table is 120 ft. in length.

BREVITY—Identify by IEN - 3435 if you write the maker

PAINTING . . Silicone alkyd resins for use in metal product finishing

Source: LIBBEY-OWENS-FORD GLASS CO.
2114 Sylvan Ave., Toledo 6, Ohio

Technical bulletin
$1 for detail

Plaskon ST-856 silicone-alkyd resin is a new baking enamel for general industrial use on products where heat is harmful to usual coating films and where durability in exterior and interior exposure is necessary. A companion material, known as Plaskon ST-873, is formulated for air drying rather than for baking and applies on larger finishing areas than those which can be baked. This resin has good possibilities for consumer and maintenance paints that can be sprayed or brushed on.

Plaskon ST-881 is the third of the three new resins. It is a vehicle for aluminum or paint of similar pigment characteristics. It is durable, flexible, adheres well and maintains its film properties at high temperatures. Low temperatures have little or no effect on these resins. All are intended for use in one-coat application to eliminate the need of a primer.

The materials have excellent resistance to weathering, humidity, attack by chemicals and salt spray. Typical applications are in finishing for space heaters, transformers, motors, chemical and refinery equipment, utility towers, containers, electric roasters, automotive exhaust pipes, sunlamps, surgical sterilizers, refrigerators, stoves, signs, ships.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3436 if you write the maker

LOWER MILLING COSTS!

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

Kent-Owens builds 'em *rugged . . . simple . . .* and *versatile . . .* machines adaptable to countless milling jobs. Designed for rapid, easy set-up and cost-saving operation. Extra rigid head mounting assures balanced load. Greater cutting efficiency with smooth, powerful cutter drive—only two gear contacts, motor to cutter. Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machines Co., Toledo, Ohio.

KENT-OWENS
Milling Machines

BREVITY—Identify by IEN - 3437 if you write the maker

The ANSWER
for controlling air electrically!

MODEL NE
Electric
VALVE

10 WATT SOLENOIDS—Low power requirements. No relays, no transformers required. Operates directly off regular 110 or 220 v. circuits. Solenoids continuously rated.

FAST, EFFORTLESS CONTROL—Works by push button, limit switch, or any light contact. Only momentary contact needed. Ideal for remote control . . . interlock or sequence operation . . . building into equipment.

DISC TYPE—Pilot controlled; piston operated. Metal-to-metal seat; positively air-tight. Quiet, self-lapping, long lasting. No packing or seals to maintain.

HANNIFIN ENGINEERED—Small, rugged, self-contained. Type 1 for control of advance and return cylinder strokes through separate push buttons. Type 2 for single push button control—equivalent to spring return valve action. Sizes ⅜", ½", and ¾". 25 to 150 p.s.i.

Ask for Bulletin 230

HANNIFIN
Corporation
1107 So. Kilbourn Avenue • Chicago 24, Illinois
Nationwide Sales and Service

BREVITY—Identify by IEN - 3438 if you write the maker

IDEAL Thermo-Grip® Does Soldering Jobs Better!

Thermo-Grip with "Plier" attachment speeds up soldering of lugs to cables.

FASTER!

Resistance heating provides instant heat for fast production soldering.

EASIER!

One hand always free to handle solder. Concentrates heat. Does jobs no other tool can handle.

CHEAPER!

Time savings up to 30%—no waste — no cold flow joints—no re-makes.

NEW LOW-COST MODEL

Sold Through America's Leading Distributors

"Standard" 1000-watt Model with "Plier," "Pencil" and "Fork" attachments also available.

TEST IT FREE!

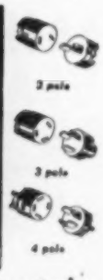
IDEAL INDUSTRIES, Inc.
1108 Park Avenue
Sycamore, Illinois

Please arrange FREE Thermo-Grip Demonstration and send catalog data.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

BREVITY—Identify by IEN - 3439 if you write the maker

Midget TRIPLOC



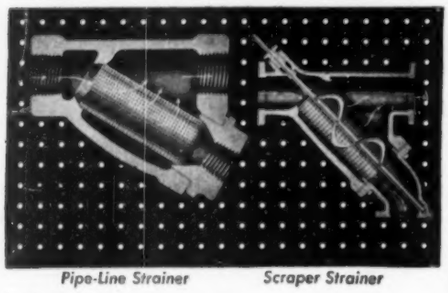
Compact, Heavy Duty Plugs and Receptacles

Midget Triploc plugs and receptacles are ideal for use with a great variety of portable electrical equipment where operating conditions are severe. Interchangeable 2, 3, or 4 pole contact units permit many different types of assembled combinations. The protected female contacts may be assembled in either plug shell or receptacle housing for protection in line side of circuit. Automatic Bayonet lock is simple and effective; polarity is maintained and correct insertion of plug assured by keyed housings and unequal spacing of contacts. Ground protection is provided when required. Rating 10A., 250V., 15A., 125V. Consult your Pylet Catalog 1100, Bul. 1140-1, page 19, for complete listings.

CONDUIT FITTINGS • FLOODLIGHTS

THE PYLE-NATIONAL COMPANY
1348 North Kostner Avenue • Chicago 51, Illinois

BREVITY—Identify by IEN - 3440 If you write the maker



Pipe-Line Strainer — Scraper Strainer

Strainers protect steam traps, regulating and reducing valves, pumps, meters or nozzles. Also, keep impurities out of fluids of all kinds. Available with scrapers for operation without interruptions for cleaning screens. Catalog Nos. 1200 and 1225.

SARCO PIPE LINE STRAINERS

293

SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

BREVITY—Identify by IEN - 3441 If you write the maker

IF YOU ARE BOTHERED BY

- FREQUENT CURRENT INTERRUPTIONS
- CONSTANT FUSE BLOWINGS
- INTERRUPTED PRODUCTION SCHEDULES

BETTER SWITCH TO . . TRICO

READ THESE USER REPORTS . . . THEN JUDGE:

"We use TRICO Fuses exclusively. On one panel TRICO Fuses have been in service since 1932 without replacement." WOOLLEN MILL ELECTRICIAN, N. Carolina.

"I am changing all my present fuses for TRICO. I have placed my second order because TRICO Fuses have proven everything you claim for them." POWER CO. ENGINEER, Virginia.

"An air compressor circuit had been blowing various 600 Amp. link fuses as much as twice a day. We switched to TRICO Fuses and they are still in service after 18 months." SECRETARY, IRON CO., Wisconsin.

Pull Fuses SAFELY with TRICO FUSE PULLERS

Hang one at every fuse box. Put one in every tool kit. Prevent accidents.

WRITE FOR BUL. NO. 5

The above user comments were unsolicited, again proving the superiority and improved performance experienced with TRICO "Powder-Packed" Renewable Fuses. BETTER TRY TRICO . . . Call your dealer, or . . . *WRITE FOR BOOKLET 206-A.*

TRICO FUSE MFG. CO. Milwaukee, Wis.

BREVITY—Identify by IEN - 3442 If you write the maker

FAIRFIELD GEARS *Help build* TOP PERFORMANCE into any product!

It's a better product when it's equipped with FAIRFIELD GEARS! Long producers of precision-made, automotive type gears for high grade trucks and tractors, Fairfield now brings the same standards for gear performance to a wide variety of products: Road Graders . . . Machine Tools . . . Power Shovels . . . Printing Presses . . . Grain Combines . . . Mine Hoists . . . Rail Cars . . . Drilling Rigs . . . Diesel Engines . . . and many others. For the BEST in GEARS, specify FAIRFIELD!

FAIRFIELD MANUFACTURING COMPANY
315 South Earl Avenue • Lafayette, Indiana

BREVITY—Identify by IEN - 3443 If you write the maker

HOIST . . Motor driven chain design uses link chain, rates ¼ to 1 ton

Source: ROBBINS & MYERS INC.
1343-47 Lagonda Ave., Springfield 99, Ohio

Type JC is a new electric chain hoist available in ¼, ½ and 1-ton ratings. It is standard design for hook suspension but can be adapted for use with a trolley. Load is taken by a steel chain, single in ¼ and ½-ton ratings, double on the 1-ton unit. Chain length is subject to specification and can be any required amount since it rides over a sprocket and does not wind on a drum.

Motor and mechanism are assembled in a closed housing made of cast aluminum. The heat-treated gearing and steel shafts operate in oil. The shafts are mounted on ball bearings. Control centers at pendent operating pull handles that connect to switches.

BREVITY—Identify by IEN - 3444 If you write the maker

SIGNALING . . Midget buzzer operates on ac. or dc., 6 to 48 volts

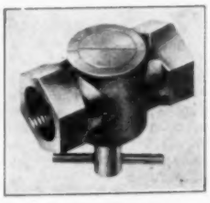
Source: AUTH ELECTRIC CO.
34-22 45th St., Long Island City 1, N. Y.

Model 1702-0 is a new medium-intensity electric buzzer that measures 1⅛ by 1⅝ by ½ in. and weighs 1½ ounces. It operates on 6 to 48 volts as specified on ac. or dc. input. Locking adjustments can be set for variable volume and pitch. Contacts are silver. Springs are made of bronze.

BREVITY—Identify by IEN - 3445 If you write the maker

VALVE . . Straight plug cock for throttling or shut-off, ¾ inch

Source: REYNOLDS-SHAFFER CO.
12102 Cleverdale Ave., Dept. S-3, Detroit 4, Mich.



The brass body and straight brass plug in this new Type R-V cock are assembled in a close but free-rotating fit. The plug is equipped with O-rings on both sides of its port to prevent axial leakage. The plug is held in place in the body by a screw with its end riding in a circumferential slot.

New designs include a plug with a ¼-in. circular port and one with an opening equal in area to the flow through a 1-in. pipe. Both turn to 90 deg. between full open and full closed or can be set in any desired intermediate position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 3446 If you write the maker

WHEN you haul with Moto-Bug you have *full power forward and reverse* . . . for traveling 1½ to 4 m.p.h. in either direction . . . for backing up . . . for spotting. There's *no pushing, no pulling.* Operator takes it easy . . . rides on *rear step* . . . has positive steering wheel for effortless driving. Handy 33" width clears narrow doorways, crowded aisles . . . turns in own length. Simple, standard-make 4 h.p. gasoline engine takes full load up 20% ramps. Carries 10 cu. ft. in big-capacity hopper . . . 1200 lbs. on sturdy 4-ft. flat-bed platform. Fork-lift attachment available. You'll be surprised at the low initial cost . . . Moto-Bug quickly pays for itself with more production per man-hour. Get the facts from your Kwik-Mix distributor, or write us NOW.

KWIK-MIX COMPANY PORT WASHINGTON, WIS. (Koehring Subsidiary)
Also Mfrs. of: CONCRETE • PLASTER • BITUMINOUS MIXERS

BREVITY—Identify by IEN - 3447 If you write the maker

5 WAYS A BETTER BUY

1. Maximum head contact
2. Head perfectly concentric with body
3. Burnished threads - class 3 fit
4. Flush head surfaces
5. Non-slip hex wrenching

Allen

FLAT HEAD CAP SCREWS

In 95 standard sizes, NC and NF threads from leading distributors everywhere. Ideal for heavy duty fastening of thin plates, strips, moldings and sheet metal parts. Write factory for full information.

WARNING
Allen-Type screws aren't necessarily Allen-Made. Get genuine "Pressur-Formd" Allen ⬡ Head screws in this black and silver box.

ALLEN ALLEN HEAD
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

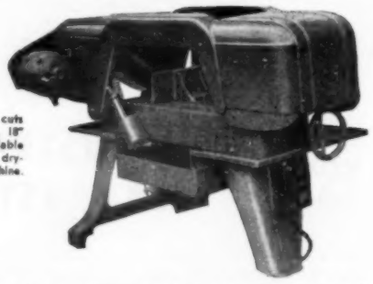
BREVITY—Identify by IEN - 3448 If you write the maker

THEY CUT AND CUT AND CUT

Every

JOHNSON METAL CUT-OFF BAND SAW

is a BEAR for WORK and Lasts Indefinitely



MODEL J cuts 10" rounds, 18" flats. Available as a wet or dry-cutting machine.

When you buy a Johnson Band Saw you can be sure it will stand up and deliver constant service year after year. Johnson Saws are ruggedly built from the best standard parts available. They are adaptable to any cutting job, requiring only a minute's time to change from light to heavy stock. For extra capacity, accuracy, speed and economy, insist on a Johnson with its many outstanding features.

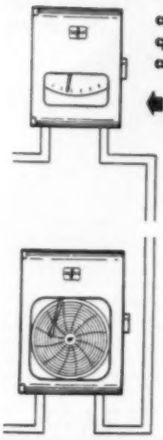
MODEL B smaller machine shown at right . . . Does a man-size job. Cuts 5" rounds, 10" flats. Furnished with or without casters. Really portable, can be taken anywhere for on-the-job cutting.

THERE IS A DEALER NEAR YOU

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

BREVITY—Identify by IEN - 3450 if you write the maker

How to Shorten Distances in a Plant



and improve production and quality by remote measurement and control

MEASURE HERE

Bristol Metameter* telemetering transmitter at a remote location measures pressure, flow, level, temperature, voltage, current or power.

TRANSMIT ANY DISTANCE

—a few feet or many miles—by telephone circuits, private wires, carrier-current channels, radio (including microwave).

RECORD HERE

Bristol Metameter telemetering receiver at central point, records or indicates measurement made by the transmitter.

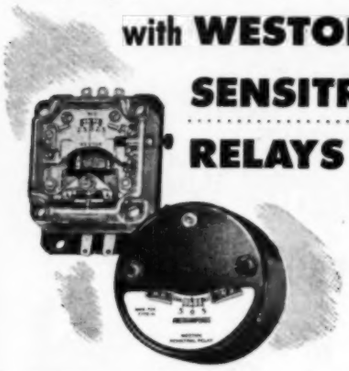
BRISTOL Write us for Bulletin M1700. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

*Reg. U. S. Pat. Off.

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 3451 if you write the maker

Amplify the easy way.... with WESTON SENSITROL® RELAYS



- Operate reliably on values low as 0.00000000006 watt—and control 12 watts.
- No standby power required—no batteries, tubes, transformers.
- No replacements necessary.
- Magnetic contacts assure reliability—not subject to *frying*.
- Available in single and double contact types—manual or solenoid reset.

WESTON High Frequency Electronic Analyzer

A versatile three-in-one instrument which provides a conventional Volt-Ohm-Milliammeter, a high impedance Electronic Volt-Ohmmeter, and a stable, probe type Vacuum Tube Voltmeter for use to 300 megacycles. RF and D-C probe supplied. Complete stability is attained on all ranges from 3 to 1200 Volts and 200 Ohms to 2000 Megohms full scale.

WESTON *Instruments*

WESTON ELECTRICAL INSTRUMENT CORPORATION

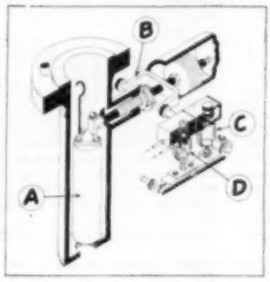
Manufacturer of Weston and Tagliabue Instruments

603 FRELINGHUYSEN AVENUE • NEWARK 5, NEW JERSEY

BREVITY—Identify by IEN - 3453 if you write the maker

CONTROL . . Displacement transmitter actuates pneumatic liquid level control

Source: BROWN INDUSTRIAL DIVISION
4456 Wayne Ave., Philadelphia 44, Pa.



New transmitter applies on a tank or pressure vessel or unit of process equipment in which liquid level requires close control. It connects with any standard design of pneumatic receiving-controlling instrument to operate a diaphragm valve in a supply line, or withdrawing line, to maintain a predetermined level. Nine ranges are maximum at 14 to 120 inches. Pressure rating is 300 and 600 pounds. Specific gravity adjustment is between .3 and 2.0.

Stainless steel cylindrical displacer A is enclosed in a cast-steel housing with suitable connections top and bottom to the vessel in which level is to be controlled. The displacer is suspended from a horizontal rod that passes through a sealing bellows, a ball-bearing supporting yoke B, to carry balancing and adjusting weights within an enclosure at its right-hand end. The ball-bearing yoke carries a shaft extension mounting a double-lever mechanism and a knife-edge adjustment at which specific gravity can be set. Vertical movement of the lever in upward or downward direction, upon rotation of the yoke, actuates a damping bellows C, and a pneumatic balancing bellows D. This latter bellows connects into the pneumatic controller circuit to provide the required control action.

BREVITY—Identify by IEN - 3454 if you write the maker

BELLOWS . . Range of metals for controls, seals, expansion joints

Source: CHICAGO METAL HOSE CORP.
1316 S. Third Ave., Maywood, Ill.

Flexon trade names a new line of flexible metal bellows available in brass, bronze, Monel, Inconel, stainless steel. Construction can be single or multiple ply and in a range of lengths and diameters to meet given requirements. The company is prepared to design and manufacture each unit to specification and to include fittings that may be required.

Bulletin CMH-113-ERW, 20 pages, presents illustrated data on the bellows, on assemblies and on devices based on the bellows construction. Tables are included assembling technical data, dimensions, characteristics. Typical sectional views of applications are included.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3455 if you write the maker

to STOP MOTION

in Machines 600 to 100,000 RPM!

With this portable, self-contained, easy-to-operate stroboscope anyone can stop motion in any reciprocating or revolving cyclic machine or part. In thousands of cases ONLY with the STROBOTAC® can you see exactly how a machine or part is functioning. You can make the part appear to operate at a fraction of an rpm to study wear, misalignment, slippage and many other deficiencies.

The STROBOTAC in addition is a direct-reading electrical tachometer for measuring speed from 600 to 14,400 rpm. With simple multiple-flash technique this speed-measuring range is extended to 100,000 rpm. No mechanical or electrical contact between the STROBOTAC and the motion being studied is required!

Complete and ready to operate the STROBOTAC sells for $140.00. For complete information

Write for the Strobotac Bulletin

GENERAL RADIO COMPANY Cambridge 39 Massachusetts

90 West Street NEW YORK 6 — 920 S. Michigan Ave. CHICAGO — 1000 N. Seward St. LOS ANGELES

BREVITY—Identify by IEN - 3456 if you write the maker

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer.

A-443 Die handling trailer.

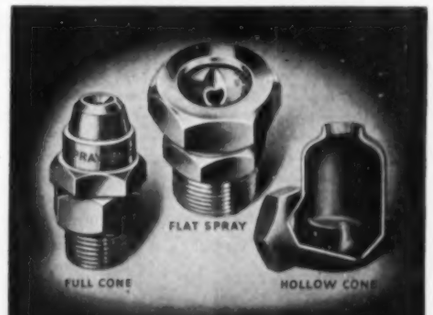
A-520 Medium height, 5th wheel steer trailer.

MERCURY

In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

BREVITY—Identify by IEN - 3457 if you write the maker

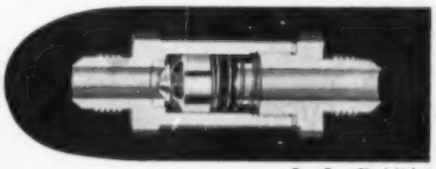


SPRACO NOZZLES

Write for NOZZLE CATALOG to
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

BREVITY—Identify by IEN - 3458 if you write the maker

KOHLER PRECISION PARTS



Cone Type Check Valve

AIRCRAFT • INDUSTRIAL • AUTOMOTIVE

KOHLER PRECISION PARTS are used by manufacturers of Diesel engines, automobiles, trucks, tractors, jet engines, military, commercial and private aircraft, and for agricultural and industrial test equipment.

With an organization experienced and skilled in precision workmanship, Kohler maintains full facilities for forging, casting, machining, anodyzing, assembling, and testing.

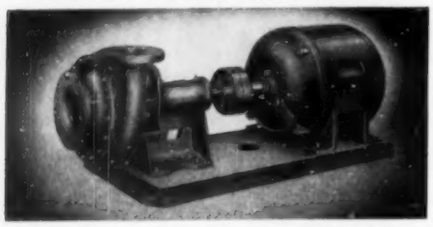
Kohler engineers will develop precision valves and fittings for volume production to meet special applications. Write for a catalog and send your specifications or requirements.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

Plumbing Fixtures • Heating Equipment
Electric Plants • Air-Cooled Engines • Precision Parts

BREVITY—Identify by IEN - 3459 If you write the maker



Goulds New Design

Gives Carefree Pumping Efficiency for the Long Pull

The 3169 is one of the latest designs to come off Goulds drawing board. It takes every advantage of modern hydraulic design—and it is thoroughly tested and proven for economy and dependability.

With the 3169 you get tremendous versatility with high operating efficiency and relatively low power consumption.

TEN SIZES TO FIT YOUR NEEDS Available in ten sizes for both motor and belt drives. Perfect for a great variety of applications. Capacities up to 1000 G. P. M.—with heads to 290 ft. depending upon capacity.

For complete information phone or write Pump Headquarters, Seneca Falls, N. Y. Ask for Bulletin 720.4.

Goulds PUMPS INC. Seneca Falls New York

BREVITY—Identify by IEN - 3460 If you write the maker

ROLLAWAY SEMI-LIVE SKIDS AND JACKS

FEATURING THE RE-NU TOP

Steelbound Rollaway Skids combine the best features of bolted and welded designs. The frame supporting members are arc-welded, and the renewable hardwood deck is tightly clamped with steel bolts of extra tensile strength. Welded-in, heat-treated, steel connecting pin. Semi-steel rubber-tired or Flor-Savr wheels with Hyatt roller-bearings, heat-treated steel axles.

CAPACITIES: 1500, 2500, and 5000 POUNDS

YALE AND TOWNE ROLLAWAY JACKS are stocked at the Lanham Company's plant and are sold and shipped directly from Louisville for use with ROLLAWAY SKIDS.

SECTIONAL BINS RE-NU TOP SKID PLATFORMS SKID BOXES

THE LANHAM COMPANY

1405 S. 12th St., Louisville, Kentucky

BREVITY—Identify by IEN - 3461 If you write the maker

American Folding Chairs

NEW IMPROVED DESIGN!

BEST FOR EVERY FOLDING CHAIR PURPOSE!

- DURABLE—strong steel frame, reinforced
- SAFE—no tipping, pinching, snagging hazards
- COMFORTABLE—extra-wide, extra-deep seats and backs
- CONVENIENT—fold quietly, quickly, compactly
- RUBBER SHOES—long-life, replaceable
- SEAT STYLES—formed plywood with durable lacquer finish; or vinyl-plastic upholstered

OVER EIGHT MILLION IN USE!

WRITE FOR DESCRIPTIONS AND PRICES

American Seating Company

Grand Rapids 2, Michigan

Branch Offices and Distributors in Principal Cities

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 3462 If you write the maker

BRAZING . . Technical data bulletin on properties of fluxes for silver-alloy brazing

Handy & Harman
80-84 Fulton St., New York 7, N. Y.

Bulletin T-8, 8 pages, uses pictures to show performance of fluxes on a number of standard metals, results of life tests at 1,300 deg. F., and the qualities desirable in a flux for silver alloy brazing. Text presents details on these points.

BREVITY—Identify by IEN - 3463 If you write the maker

DEFENSE PRODUCTION . . Answer booklet to questions on inventory control and priorities

National Production Authority
Your Local NPA Office

Eighty-five questions are answered by new 16-page booklet, "Inventory Control and Priorities," available from your local NPA office. They deal with Regulation 1 on topics such as working inventory, allowable increases, earmarking, delivery, imports, and on Regulation 2 such as time limits, cancellation.

BREVITY—Identify by IEN - 3464 If you write the maker

DIE CASTINGS . . Suggestions on design in 68-page booklet on zinc-alloy die castings

New Jersey Zinc Co.
Front & Maiden Lane, New York 7, N. Y.

Drawings and photographs illustrate the suggestions in new booklet, "Designing for Die Casting." The suggestions cover die design, casting size, section thickness, fillets, studs, threads, tolerances, bending and forming after casting.

BREVITY—Identify by IEN - 3465 If you write the maker

DRILLING . . How to use portable drills described by new 32-page information booklet

Mall Tool Co.
7782 S. Chicago Ave., Chicago 19, Ill.

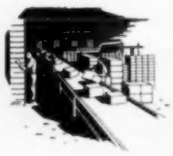
"More Holes in a Hurry" titles new booklet on portable electric drills. It describes how to use them, how to care for the chuck, drill bit grinding and lubricants, drilling various materials, tool maintenance. Included are tables on speeds, tap drill sizes, data on the company's tools.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3466 If you write the maker

Mathews Belt Conveyers

"ENGINEERED TO SERVE PRODUCTION"



● One of the many widely applied types of conveying equipment designed and built by Mathews Conveyer Company.

The complete line of Mathews designed—Mathews built Conveyers includes the following:

ROLLER CONVEYERS • CHAIN CONVEYERS • LIVE ROLLER CONVEYERS
WHEEL CONVEYERS • ELEVATING CONVEYERS • PORTABLE CONVEYERS
ROLLER SPIRAL CONVEYERS • TROLLEY CONVEYERS
SPECIAL CONVEYING MACHINERY

MATHEWS CONVEYERS

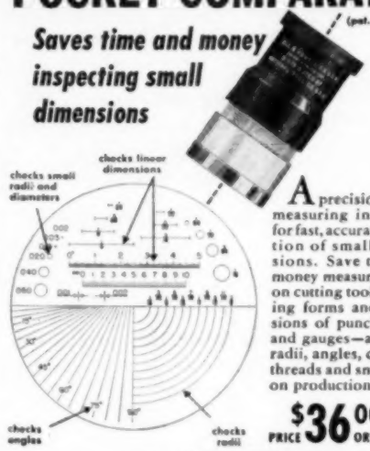
GENERAL OFFICES
Mathews Conveyer Company . . Ellwood City, Pennsylvania
PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, Calif.
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario

Engineering Offices or Sales Agencies in Principal American and Canadian Cities

BREVITY—Identify by IEN - 3467 If you write the maker

new POCKET COMPARATOR (pat. applied for)

Saves time and money inspecting small dimensions



A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

a product of BELL & HOWELL CO. *distributed by*

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 3468 If you write the maker

PANGBORN Hydro-Finish gives better tool room results . . .

in a fraction of the time!

SIMPLIFY the manufacture and maintenance of tools, dies and molds with versatile Pangborn Hydro-Finish. It reduces usual costly handwork and produces a surface virtually free from directional grinding lines.

And on the production line, use Hydro-Finish to eliminate many tedious finishing operations. It reduces cost and time involved in buffing. It lessens fatigue failure and cuts manufacturing costs.

Hydro-Finish is the new, versatile impact blasting process that uses a fine mesh abrasive suspended in water. Tolerances are held to .0001 of an inch.

FIND OUT TODAY how Hydro-Finish can pay off for you. Write for Bulletin 1400-A to PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control.

Pangborn

BLAST CLEANS CHEAPER

with the right equipment for every job

BREVITY—Identify by IEN - 3470 If you write the maker

Specially Designed! Specially Built! ALL-PURPOSE CASTER

Here it is! Albion Industries' Series II All-Purpose caster for light and medium duty service under all conditions. Ideal for those hundreds of caster applications in your plant. Series II's are unbeatable — and they cost less than you think.

Drop forged steel top plate, rolled-in and hardened raceways, and formed all-steel legs welded to yoke. Wheel sizes 4", 5", 6" and 8". Metal, rubber and Texite wheels.

Write for catalog E.N.-1 showing full line of casters

PROMPT DELIVERY

"See us at the Material Handling Show, Chicago, Booth 102."

ALBION INDUSTRIES, Inc.
ALBION, MICHIGAN

BREVITY—Identify by IEN - 3471 If you write the maker

EVERY SHIPMENT BECOMES **FAST FREIGHT**

SWIFT MOVEMENT OF MATERIALS, the greatest single step to increased productive output, results when Towmotor Mass Handling makes "fast freight" of every shipment in thousands of America's leading plants. Towmotor operation assures record-breaking speed in unloading carloads of materials and fast in-plant movement of heavy loads. Write for folders describing the Towmotor line and Special Engineering features. Towmotor Corporation, Div. 26, 1226 E. 152nd St., Cleveland 10, Ohio.

MH* For Warehouses and fast materials handling in every industry.

TOWMOTOR
THE ONE-MAN BAND

*MH is Mass Handling —systematic movement of the most units in the shortest time at lower cost.

FORK LIFT TRUCKS and TRACTORS
Receiving • Processing • Storage • Distribution

BREVITY—Identify by IEN - 3472 If you write the maker

ACCURATE DRAWINGS DEPEND UPON ACCURATE **SCALES**

SPEED SHOP PRODUCTION...
CUT COSTS
by "tooling-up" your drafting machines now with scales of lasting accuracy—

DURALINE
THE LIFETIME SCALE

Precision ground from solid aluminum alloy—won't shrink, warp, peel, chip or burn. Highest accuracy—engine divided at 68° F. Large numerals—easy to read. Liquid honed—banishes glare in any light. Graduations can't file pencil. Special coating—can't smudge paper.

No other scale combines all these features. Order from your dealer—NOW—or write us if he cannot supply—DURALINE. Literature on request.

UNIVERSAL DRAFTING MACHINE CORP.
7960 LORAIN AVENUE • CLEVELAND 2, OHIO

UNIVERSAL
DRAFTING MACHINE — DURALINE SCALES

NEWS NOTES—Continued

"Study course on television servicing"

BREVITY—Identify by IEN - 3473 If you write the maker

DRILLING . . Instruction manuals for operators of company's drilling machines

Barnes Drill Co.
856 Chestnut St., Rockford, Ill.

Example of useful information to assist the operator of a machine tool is the 24-page "Operating Instructions and Replacement Parts Manual" for the company's No. 221½ drilling and tapping machine. It presents a basic description, tells how to set the machine into operation and how to perform six specific types of work. It also gives specifications, floor plans and capacity charts, installation instructions, and a list of replacement parts keyed to drawings.

A similar manual of 28 pages deals with the company's No. 242 drilling tapping machine.

BREVITY—Identify by IEN - 3474 If you write the maker

DRIVES . . Selection information in new bulletin on roller chain drives

Atlas Chain & Mfg. Co.
3799-803 Castor Ave., Philadelphia 24, Pa.

How to compute sizes for chain drives, examples of good and bad layouts, tables of horsepower ratings, are among the information in new 28-page Catalog ARC-51 on roller chain. Other information includes suggestions on lubrication and maintenance, standard types, sizes, list prices.

BREVITY—Identify by IEN - 3475 If you write the maker

DUST COLLECTING . . Information booklet on design and operation of exhaust equipment

Pangborn Corp.
230 Pangborn Blvd., Hagerstown, Md.

54-page booklet, "Industrial Dust Control through Exhaust Systems," initially published in 1946, now is offered by the company upon request. It describes methods of collecting dust, components in an exhaust assembly, the collecting equipment itself, blower and drive, operation and maintenance.

BREVITY—Identify by IEN - 3476 If you write the maker

ELECTRONIC SERVICING . . Home study course will train you to service television equipment

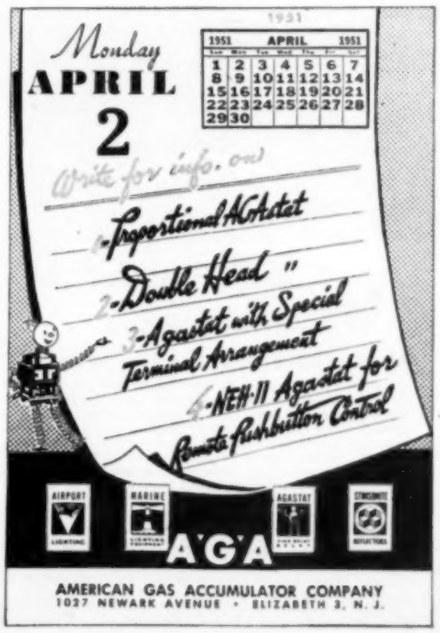
RCA Institutes Inc.
350 W. 4th St., Room 300, New York 14, N. Y.

Home study course originally developed for RCA Service Company's own television service technicians now is offered to individuals in the radio and television industry who may wish to qualify as electronic service experts. The course is intended to circumvent the rapidly-developing shortage of trained television servicemen. It consists of 10 lesson units, each with a home assignment. Completed lessons are mailed back to the Institute for grading. Tuition is $9 per lesson unit for individuals, $7.50 per unit per individual in groups of 50 or more through their employers.

The course is kept up to date with current developments in the field. Previous service experience is not necessary for working members of the radio and television industry. An outline of the course and enrollment forms are available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3477 If you write the maker



AMERICAN GAS ACCUMULATOR COMPANY
1027 NEWARK AVENUE • ELIZABETH 3, N. J.

BREVITY—Identify by IEN - 3478 If you write the maker

Get this *NEW* UDYLITE FULL AUTOMATIC CATALOG *NOW!*

Hot off the presses is this new, complete catalog of Udylite Full Automatic Plating Machines. Descriptions and photographs of every type of Udylite automatic plating units—from the famed Single Row Full Automatic to the economical "Junior" are included in this booklet. Get the complete story on how Udylite machines are built—how they perform in the field—and how Udylite service guarantees the finest plating results. Call your nearby Udylite Technical Man today or write direct for your copy of the Udylite Full Automatic Catalog. Address: The Udylite Corporation, Detroit 11, Michigan.

PIONEER OF A BETTER WAY IN PLATING

THE **Udylite** CORPORATION
DETROIT 11, MICHIGAN

BREVITY—Identify by IEN - 3479 If you write the maker

Take your pick of 25 B&D Drills to—

B&D Drills from ¼" to 1½" capacity in steel, double in hardwood — also drive Hole Saws from ⅝" to 4" diam.—make powerful drill presses when mounted in B&D Drill Stands.

Speed up Drilling— Cut Drilling Costs!

BLACK & DECKER ELECTRIC DRILLS are packed with quality features that mean faster drilling, easier handling, longer life and lower costs!

The B&D Drill Line gives you a choice of capacity in 25 models—a choice of handles for easiest operation—a choice of speed, power and price in most sizes. The B&D Drill Line gives you full power from B&D-built motors that can't be stalled—extra-tough gears, shaft and chuck spindle and huskier housings for longer service.

Next time you need Electric Drills, be sure to see your nearby Black & Decker Distributor. Let him demonstrate the many features of these cost-cutting, timesaving B&D Drills. Write today for free catalog to: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

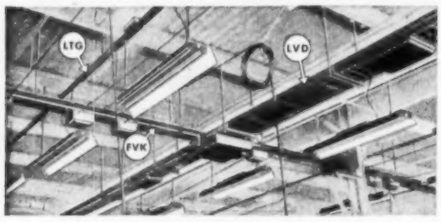
Black & Decker
PORTABLE ELECTRIC **TOOLS**

BREVITY—Identify by IEN - 3481 if you write the maker

CARTER PRODUCTS COMPANY INC.

57 Mount Vernon, N. W. Grand Rapids 4, Mich.

BREVITY—Identify by IEN - 3482 if you write the maker



How to have a

POWER DISTRIBUTION SYSTEM

flexible enough for any emergency

Trumbull FLEX-A-POWER* is a system of busways for low-voltage service . . . furnished in standard pre-fabricated sections, which may be economically dismantled and relocated.

LVD (600-4000 amperes) — service entrance and high-capacity feeder. Can be dismantled, relocated with complete salvability. Bulletin TEB-1.

FVK (225-1000 amperes) — plug-in busway to individual loads. 15 outlets every 10 feet. Save rewiring when loads are relocated. Bulletin TEB-4.

LTG (50 amperes) — plug-in or trolley busway to light-duty loads. Can be instantly tapped at any point. Every inch an outlet. Bulletin TEB-2.

*Reg. U. S. Pat. Off.

THE TRUMBULL ELECTRIC MANUFACTURING COMPANY

Plainville, Conn.

TRUMBULL (T) ELECTRIC

BREVITY—Identify by IEN - 3483 if you write the maker

NOW!

A great new *Modine* Cabinet Unit

The Modine Cabinet Unit — yours for fast, positive distribution of *heated or cooled air!* Ideal for all modern commercial and public buildings. Available in 5 capacities from 120 to 640 Edr. Also models for steam heating only.

Get new bulletin 550 today! Your Modine representative is listed in your phone book classified section. Or write direct. Modine Mfg. Co., 1503 Dekoven Ave., Racine, Wis.

Modine CABINET UNITS for Heating and Cooling U-1082

NEWS NOTES—Continued

"Instruction manual on lathe operation"

BREVITY—Identify by IEN - 3484 if you write the maker

LATHES . . Instruction manual on how to operate a lathe and attachments

Atlas Press Co.
1891 N. Pitcher St., Kalamazoo 15, Mich.

New edition of the company's "Manual of Lathe Operation" is a 272-page book, copyright 1937, that lists at $1.25. It describes lathe construction, metal cutting, cutting tools, machining, work holding, drilling, thread cutting, attachments and their uses, wood turning. Data tables are included.

BREVITY—Identify by IEN - 3485 if you write the maker

LUBRICATING . . Instructions for use of silicone grease in electric motor bearings

Dow Corning Corp.
P. O. Box 592-A, Midland, Mich.

Suggested quantity of grease per bearing and a relubrication schedule for bearings operating at 250 deg. F. are among the technical data in revised Silicone Data Sheet 44-2. The bulletin reviews properties of silicone grease, details procedure, stresses the importance of cleanliness in handling.

BREVITY—Identify by IEN - 3486 if you write the maker

LUBRICATING . . Cutting oil recommendations for machining and grinding operations in new booklet

Sun Oil Co.
1606-10 Walnut St., Philadelphia 3, Pa.

Specific operations and the cutting oil recommended are set forth in new 80-page booklet, "Cutting and Grinding Facts." Lathes, milling, gear-cutting, drilling, grinding machines are included. There is a table to summarize these recommendations and notes on available grades.

BREVITY—Identify by IEN - 3487 if you write the maker

MANAGEMENT . . Production control with the aid of punched cards described in bulletin

Remington Rand Inc.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Collecting and coordinating facts by punched-card methods is subject of revised edition of the company's 48-page Form TM-596, "Production Control in Manufacturing Industries." The bulletin tells how punched cards can be used for engineering records, production planning, materials, control, scheduling.

BREVITY—Identify by IEN - 3488 if you write the maker

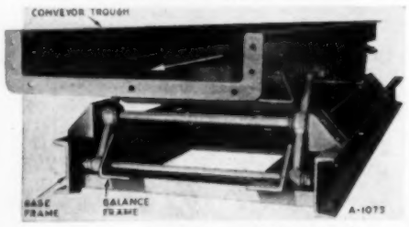
MOTORS . . How to lubricate them described in bulletin by company's engineer

Wagner Electric Corp.
6488 Plymouth Ave., St. Louis 14, Mo.

"To Grease or Not to Grease?" titles new 4-page bulletin addressed to users of ball-bearing electric motors. It describes lubrication essentials, causes of bearing failure, where not to lubricate, choice of lubricant, sealed bearings. It includes a suggested lubrication procedure and lubrication interval chart.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descripsions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3489 if you write the maker



"Natural Frequency" the invisible servant
End view of conveyor. Conveying trough and balance frame, mounted on opposite ends of rocker arms, vibrate in opposite directions—thus neutralizing vibration . . . no need for heavy, expensive foundations.

Vibrations Move Materials . . . at low cost per ton!

Use of power *regenerated* by coil springs cuts power requirements in the S-A Natural Frequency Conveyor and reduces operating costs. Bulk or packaged materials are moved horizontally or up mild incline. Conveyor furnished in 10-foot sections with one drive serving several sections. Conveys up to 70 feet per minute. Other features: low headroom . . . "Balanced" vibrations eliminate need for heavy or vibration-proof frame . . . easy to clean . . . quiet in operation . . . economical. *Ask for Bulletin 950.*

1901-1951

50 years experience with bulk handling

STEPHEN S-A ADAMSON MFG. CO.

231 Ridgeway Ave., Aurora, Ill. Los Angeles, Calif. • Belleville, Ont.

Designers and Manufacturers of All Types of Bulk Materials Handling Equipment

BREVITY—Identify by IEN - 3490 if you write the maker

A complete variable speed power plant in single unit

Combines motor, REEVES speed varying mechanism, and speed reducer in one, space-saving unit.

REEVES VARI-SPEED MOTODRIVE

To new machines or old, REEVES Vari-Speed Motodrive brings all the benefits of stepless speed adjustability. Available with any standard, constant-speed, foot-type motor—no special motors to stock. Horizontal and vertical models, 1 to 20 hp; 2:1 through 6:1 speed ratios; fractional hp sizes in speed ratios through 10:1; manual or automatic controls. Assures *positive, accurate* speed changes without stops—easily applied to machines in service—proved in 300,000 installations. Send for free catalog No. IN 72-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

BREVITY—Identify by IEN - 3491 if you write the maker

WIRE FORMS

COIL SPRINGS . . METAL STAMPINGS

ACCURATELY MANUFACTURED TO YOUR SPECIFICATIONS

Dudek and Bock's precision high speed equipment turns out your work faster and at lower cost!

Expert Free Service

Depend on our master engineers for designs that fit your needs to a "T". When others have failed, we will have the answer. Consult us Today — no obligation!

Get quality SPRINGS, from gram loads to pound loads—WIRE FORM and METAL STAMPINGS that save production costs and promote operating efficiency.

DUDEK and BOCK SPRING & MFG. CO.

2100 W. Fulton, Dept. I
Chicago 12, Ill.

Write—Wire—or Phone Haymarket 1-3676

BREVITY—Identify by IEN - 3492 if you write the maker

How to save money in RELINING OLD FURNACES

IT'S EASY to cut down on furnace relining costs if you use B&W Insulating Firebrick. B&W IFB can be cut with ordinary woodworking tools—are easy to handle and fit into place. This alone saves you valuable dollars in production time and labor costs.

B&W IFB save on fuel, too. They have the highest insulating value of any refractory in their class and because of their light weight reach operating temperature quickly, reducing total cycle time, increasing production time available.

WRITE today for full information on B&W Insulating Firebrick. Ask for Bulletin R-2-H. R-339

THE BABCOCK & WILCOX CO.

85 LIBERTY STREET, NEW YORK 6, N. Y.
WORKS: AUGUSTA, GEORGIA

▼ BREVITY—Identify by IEN - 3493 If you write the maker ▼

CUT HANDLING COSTS with these COMFORTABLE, HEAVY-DUTY AO GLOVES!

AO 5X264 and 5X284 gloves can be real money-savers. Cotton fleece backs not only reduce cost but add flexibility and comfort.

Both gloves are heavy-duty with heavier leather in palm or work area and steel sewed seams. Leather palm extends over heel of hand, eliminating an uncomfortable bib patch.

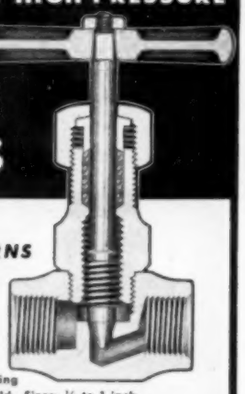
Other features include no seams around index finger, heavy, reinforcing steel stapled strap around thumb crotch . . . heavyweight safety duck cuffs with heavy tape binding and elastic on back for snug fit. Ask your AO Safety Products Representative for 5X284 if you prefer seams on back of fingers. Leather is chrome tanned cowhide.

American Optical SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 3494 If you write the maker ▼

CRANE HIGH PRESSURE BAR STOCK VALVES



GLOBE AND ANGLE PATTERNS IN MATERIALS TO FIT YOUR NEEDS

Cross-section, No. 222 Globe, Female ends, Working Pressure: 3000 pounds cold. Sizes: ⅛ to 1-inch

You can find any number of uses for Crane Bar Stock Valves—on orifice meters, regulator leads, by-passes, gauges, and similar installations. For these valves are designed to meet a variety of fluid handling needs.

THREE MATERIALS TO CHOOSE FROM—Steel, for common services; Exelloy, for oil or gas containing sulphur compounds; 18-8 Mo, for oil and gasoline containing hydrogen sulphide and sulphur dioxide when moisture is apt to be present.

ACCURATE FLOW REGULATION assured by wide seating surfaces on plug type disc.

RUGGED CONSTRUCTION—Body and bonnet are solid bar stock, screwed together with extra long thread engagement. Body seats are integral, as is disc with stem.

CHOICE OF END CONNECTIONS—Female ends, or combination of male and female ends.

Ask your Crane Representative or see page 234 in your Crane No. 49 Catalog—for full information.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

EQUIPMENT FOR EVERY PIPING SYSTEM

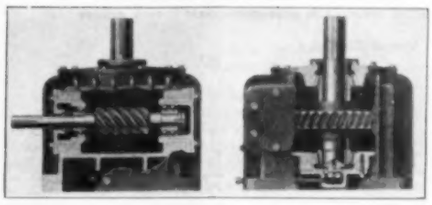
CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

▼ BREVITY—Identify by IEN - 3496 If you write the maker ▼

DRIVE . . Worm drive speed reducer in seven sizes, output is to 600 rpm.

Source: CLEVELAND WORM & GEAR CO. 3258 E. 80th St., Cleveland 4, Ohio



Initially designed for the fan drive in cooling-tower service and first introduced in 1946, the Type-CU worm-drive speed reducer is now available for heavy-duty continuous service under extreme conditions of heat and humidity such as those found in cooling towers. The unit has a horizontal input shaft with an integral worm. The shaft rides in ball bearings with a carbon seal at the driven end.

The output shaft mounts a steel worm gear with a centrifugally-cast tin-alloy bronze rim in which the teeth are cut. This shaft is mounted on roller bearings designed to take severe thrust and also radial load such as that which might be imposed by an unbalanced fan. Splash lubrication is employed on the smallest of the seven sizes. Pumps are assembled with the gear shafts for positive circulation on the others.

Input shaft diameter is 1⅛ to 2½ inches. The output shaft measures 1⅞ to 4 inches. Base dimensions are 13¼ to 30 in. in line with the input shaft, 13½ to 33¾ in. at right angles with it. Overall height from base to the top of the output shaft is 15¼ to 29 inches. The Type CU duplicates the Type NU, previously described IEN-2122-50, except that its housing carries heat dissipating ribs.

▼ BREVITY—Identify by IEN - 3497 If you write the maker ▼

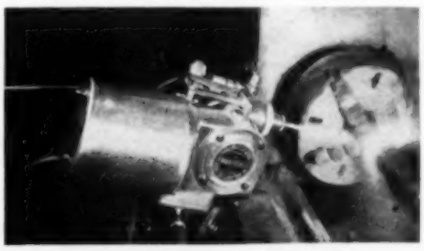
BELLOWS . . Metal diaphragms in welded assembly to specification

Source: BREEZE CORPORATIONS INC. 39-43 S. 6th St., Newark 7, N. J.

Sealing elements for valve stems and for shafts to prevent leakage, shock-absorbing and heat-resisting units for application in engine exhaust lines and ducts, expansion units for pipe lines are representative applications for the company's new line of welded diaphragm bellows. Each is designed and manufactured for a specified use and is available in metals that include carbon steel, stainless steel, Inconel, Monel, nickel or other alloys that can be welded and are inherently flexible. Diameter, number of convolutions, metal thickness and length are all variable to meet given requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3498 If you write the maker ▼



Rebuild Worn Parts by *Metallizing*

Save time, money and critical parts by Metallizing with new Moguletric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

If you already have metallizing equipment, why not consider a trade-in now for the new Moguletric Gun.

Write for new booklet containing complete information on equipment as well as production and maintenance applications.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

▼ BREVITY—Identify by IEN - 3499 If you write the maker ▼

▼ BREVITY—Identify by IEN - 3500 If you write the maker ▼

plus **BETTER HEAT-SHIELD PROTECTION**

***only* Advertise the Nozzle! . . .**

. . . because the *nozzle* on your ANSUL Dry Chemical Fire Extinguisher is *water-tight* . . . it *won't* become inoperative due to corrosion or caking of dry chemical within the working parts . . . the most inexperienced man in your plant *can use the ANSUL extinguisher effectively* . . . *and only Ansul has a nozzle* to meet all of these requirements!

If your hazards require special long range straight stream nozzles, you can get Ansul Extinguishers equipped with these nozzles at no extra cost. With Ansul Dry Chemical Fire Extinguishing Equipment you have not only the best fire protection but also a choice of models and designs to meet your requirements.

EXCLUSIVE FEATURES: Water-tight construction • Provides a modified cone-shaped stream pattern without hole in the center of the stream • Each nozzle gas pressure tested after assembly • Special spring loaded packing to insure lasting water-tightness. • Designed for use by inexperienced operators. • Low velocity, more effective stream of dry chemical.

Send for File No. 648. You will receive our catalog, a Periodic Inspection Record Chart, "Fundamentals of Fire Extinguishment" and information about Ansul Dry Chemical Piped Systems for automatic protection.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

▼ BREVITY—Identify by IEN - 3501 If you write the maker ▼

—Adds up to...

Lower Chain Costs!

Reverse rising chain costs with TM Alloy Steel Chain. It's super safe. It *stays on the job five to fifteen times longer*—has twice the tensile strength of wrought iron chain. TM Alloy Steel Chain is completely heat-treated for link to link uniformity. Extreme toughness and great resistance to shock, grain growth and work-hardness eliminate periodic annealing costs. Call your mill supply distributor today or write Dept. 4 for Bulletin 12A.

S. G. TAYLOR CHAIN CO., HAMMOND, IND.

This Registration Ring boosts the chain's service number. It's your assurance of thorough testing and link by link inspection before shipment.

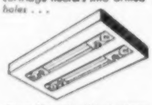
TAYLOR MADE—A GREAT NAME IN *Chain* SINCE 1873

▼ BREVITY—Identify by IEN - 3502 if you write the maker ▲▼

EASY, ACCURATE
surface heating
with G-E Calrod® Heaters

Put surface heat *where* you want it, *when* you want it, and in the *amount* you want it with G-E Calrod heaters. Calrod heaters are available for clamping on surfaces, inserting into drilled holes, casting into metal, locating in grooves, wrapping around cylinders and spacing away from surfaces. And they come in a wide enough range of sizes, ratings, and sheath materials to meet almost every conceivable heating requirement.

For a "spot" of heat, insert cartridge heaters into drilled holes . . .


For a "zone" of heat clamp on strip or tubular heaters or

. . . cast Calrod tubular heaters into metal

FOR NEW FREE CATALOG, GEC-1005A and application bulletin GEA-5097, "Heating Surfaces," write on your letterhead to: *Section 720-17, Apparatus Dept., General Electric Co., Schenectady 5, New York.*

*Reg. U. S. Pat. Off.

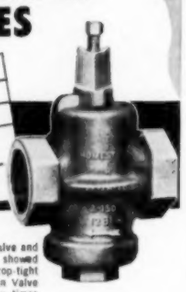
GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 3503 if you write the maker ▲▼

Up to 22 times more operations
WITHOUT RE-LUBRICATING
HOMESTEAD-REISER
Self-Seald LUBRICATED PLUG
VALVES

TEST RECORD	NO. OF OPERATIONS without RE LUBRICATING
VALVE	5
VALVE "A"	33
VALVE "B"	110
HOMESTEAD-REISER VALVE	110

Each valve assembled with the manufacturer's recommended lubricant. Test made on 75 lb. air pressure.



This comparative test of a Homestead-Reiser Valve and two other well-known lubricated plug valves showed that the Homestead-Reiser Valve remained drop-tight through twenty-two times more operations than Valve "A" without re-lubricating, and through three times as many operations as Valve "B". That means that Homestead-Reisers require less attention, and give greater economy of lubricant.

Prove the superiority of Homestead-Reiser Valves to your own satisfaction, by installing a few in your plant, side by side with any other lubricated plug valve. They may be had in both semi-steel and cast-steel, sizes ½" to 12" for steam working pressures to 150 pounds, or oil-water-gas to 200 pounds.

Write for new catalog 39-S, and for prices on your requirements.

HOMESTEAD VALVE MANUFACTURING CO.
"Serving Since 1892"
P. O. BOX 65 CORAOPOLIS, PA.

▼ BREVITY—Identify by IEN - 3504 if you write the maker ▲▼

The New Super-Hard Carbide Drill

Up to 200% Greater Life

A Better Drill For Hardened Steel

Long carbide end keeps cutting heat away from braze.

Write for Catalog Supplement No. 4

QUALITY CARBIDE TOOLS

Super TOOL COMPANY

21650 Hoover Rd., Detroit 13 • 5210 San Fernando Rd., Glendale 3

NEWS NOTES—Continued

"Booklet on selling to the armed forces"

▼ BREVITY—Identify by IEN - 3505 if you write the maker ▲▼

PACKAGING . . Metal shipping container returned to production, sizes 1 to 5 gallons

Vulcan Tin Can Co.
3002 W. Madison St., Bellwood, Ill.

Originally developed during the past war, emergency metal container is offered as a substitute for the standard ICC. lug-cover container for heavy and semi-solid materials. It has a tin-plate body with cover and bottom of tinplate or lacquered black plate. It is available in carload or trailer-load lots.

▼ BREVITY—Identify by IEN - 3506 if you write the maker ▲▼

PATENTS . . New information service on patents and patent development for inventors

Visioneering Inc.
1951 Security Bldg., West Bend, Wis.

"Patent Development" titles new information service for inventors. It is based on a loose-leaf binder containing a set of data sheets on topics such as what to invent, contracts and agreements, patent coverage, models. Monthly bulletins supplement the original information. Subscription list price is $15 for the first year, $5 each succeeding year.

▼ BREVITY—Identify by IEN - 3507 if you write the maker ▲▼

PLASTICS . . Properties and uses of laminated plastics based on company's varnishes

Bakelite Division
30 E. 42nd St., Room 1502, New York 17, N. Y.

Manufacture, types and applications of laminated plastics are described by new 42-page Bulletin C-1 for materials based on the company's varnishes. Typical products are illustrated, fabricating and finishing methods noted, properties listed in detail by nine tables at the rear.

▼ BREVITY—Identify by IEN - 3508 if you write the maker ▲▼

PROCUREMENT . . Selling to the armed forces is subject of new directory on buys what

Research Institute of America Inc.
292 Madison Ave., New York 17, N. Y.

Products are listed alphabetically from Abaca to Zinc in new 36-page bulletin, "Selling to the Armed Forces." Single copies are available upon request. Each product carries reference numbers that tie in with a list of military purchasing offices. There is a geographical list for local selling.

▼ BREVITY—Identify by IEN - 3509 if you write the maker ▲▼

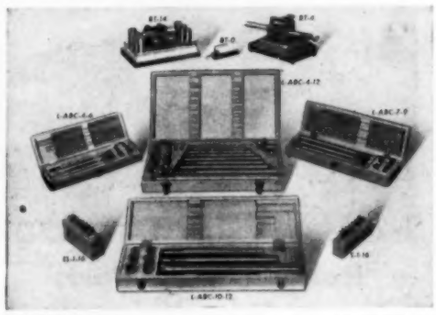
ROPE . . How to select and use it described by text and examples in new booklet

American Mfg. Co.
West & Noble Sts., Brooklyn 22, N. Y.

How rope is made from sisal, jute or manila fibres is described at the start of new 32-page pocket booklet, "American Brand Cordage." How to select rope is described by industry and service. How to use rope is described by instructions, splice and knot pictures, sling angle diagram, block reeving.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

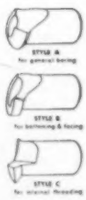
▼ BREVITY—Identify by IEN - 3510 if you write the maker ▲▼



NOW, Bokum Lathe Tools conveniently put up in sets

Sets are made up in four different combinations of Styles A, B and C tools. Three sets consist of 3 sizes each of three style cutters with interchangeable shanks, really making nine tools in all. The fourth set comprises a combination of all the above tools, making a total of 27 tools.

All the tools (cutters and shanks) are compactly arranged in a sturdy wooden box—always ready for use and protected against damage or loss.



Send for Supplement N-1 to catalog sheet N-1139-6 Lathe Tool Holder and Accessories Catalog N-483

BOKUM TOOL CO.
14775 WILDEMERE AVE. • DETROIT 21, MICH.

▼ BREVITY—Identify by IEN - 3511 if you write the maker ▲▼

AMES HAS THE BETTER ANSWER to your Long Range Problem

MODEL NO. 2822

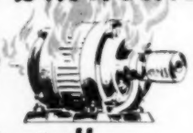
Ames Long Range Dial Indicators are doing a better job on those difficult quality control jobs which require long range close tolerance inspection. Problems such as those involving measurement of slide motions, cam travel, or checking the depth of recesses and penetrations are easily and accurately solved with Ames Long Range Dial Indicators. Models are available having ranges from ½" to 12". Some dials graduated in .001", some in .0005". Other models graduated in .0001". Write for detailed information or send your problem to Ames Engineering Department. There is an Ames Gauge or Indicator to solve practically any measuring problem controlling quality of process or product.

Representatives in principal cities B. C. AMES CO. 18 Amo Street Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

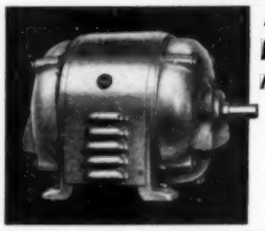
▼ BREVITY—Identify by IEN - 3512 if you write the maker ▲▼

"fed up" with motor burnouts?

AVOID THIS



Install ASBESTOS-PROTECTED MOTORS



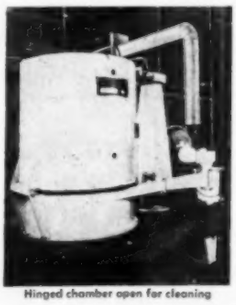
Life of a motor is proportional to life of insulation protecting its windings. Only in U. S. Motors are windings *asbestos-protected* — insurance against burnouts.

UNICLOSED ½ to 250 h.p.
Write for descriptive Uniclosed Bulletin
U.S. ELECTRICAL MOTORS Inc.
Los Angeles 54, Cal. or Milford, Conn.

US MOTORS

▼ BREVITY—Identify by IEN - 3513 if you write the maker ▲▼

The Bowen Laboratory Spray Dryer
...MEETS ALL REQUIREMENTS FOR:
SMALL LOT PRODUCTION & LABORATORY RESEARCH


Hinged chamber open for cleaning

The Table Model is "scaled-down" from Bowen commercial spray dryers. The unit can be used for actual small lot production of valuable materials or for test work where data obtained is used for design of production units.

1. EASY TO CLEAN — Hinged chamber can be opened for washing or brushing. All ducts are flanged and fastened by quick-opening wing nuts to make cleaning easy.

2. SIMPLE TO OPERATE — Engineered for ease of operation — air temperatures are controlled automatically. Requires space of only 3' x 6'.

Observation of product formation

BOWEN ENGINEERING, INC.
NORTH BRANCH 10
NEW JERSEY

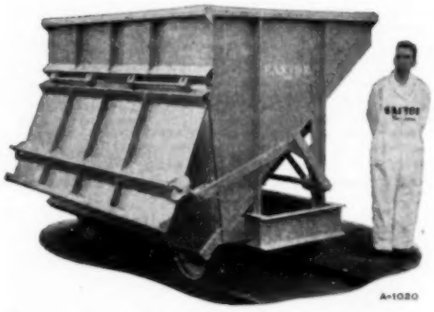
BOWEN

Since 1926 Recognized Leaders in Spray Dryer Engineering

▼ BREVITY—Identify by IEN - 3514 if you write the maker ▼

EASTON

a dependable design and construction service in industrial cars



EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

▼ BREVITY—Identify by IEN - 3515 if you write the maker ▼

PIGEON MILK

on the run!

IF YOU prepare your soluble oil coolants this way:

. . . chances are the coolant mixture at the work is seldom uniform.

The result is always LESS PRODUCTION!

. . HERE'S HOW to control your coolant uniformity:

With this Bowser coolant blender, the machine operator merely opens a faucet to run the required amount of blended coolant into the sump. The system operates automatically and continuously.

There's less wheel dressing and tool grinding, less machine downtime, fewer rejects and more production with Bowser accurately blended coolant!

Write today for new literature on the Bowser automatic coolant blending method.

BOWSER, INC., 1338 CREIGHTON AVENUE
FORT WAYNE 2, INDIANA

▼ BREVITY—Identify by IEN - 3517 if you write the maker ▼

FABRICATING . . Adhesive cloth tape and solvent to reinforce plastic sheet

Source: B. B. CHEMICAL CO.
782-86 Memorial Drive, Cambridge 39, Mass.

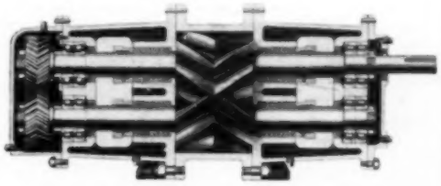
New applicator and dispenser has been developed for use with the company's activating fluid with which the adhesive face of its plastic-reinforcing cloth tape is prepared prior to application. The tape applies wherever sewed seams are subject to stress and flexing. Patches can be placed behind buttons. Corners can be reinforced against creep-tear. The added bulk of the tape minimizes danger of splitting at corners where flex-fold occurs in service.

The new dispenser screws into the opening of the can in which the activating fluid is supplied. It contains a pad that becomes saturated with the fluid when the can is inverted. The adhesive side of the tape is then drawn over this pad while, at the same time, it is held in contact with the pad by means of the applicator. It then is ready to apply and smooth into position. One end of the applicator carries a pad to moisten the plastic just before placing the tape. Tape width ranges from ¾ to 4 inches. It is supplied in rolls.

▼ BREVITY—Identify by IEN - 3518 if you write the maker ▼

PUMP . . Rotary gear design, to 1000 gpm., pressure to 250 pounds

Source: WARREN STEAM PUMP CO.
50 Warren St., Warren, Mass.



The fluid gears in this new design of the company's Rotex pump are mounted on parallel shafts which are geared together at their outboard ends so the fluid gears rotate without actually touching. The pump is suited for fluids of moderate to low viscosity, maximum at 100,000 saybolt seconds and pressures to 250 pounds. Operation is characterized by smooth, pulseless discharge and ability to maintain suction pressure and constant delivery over an extended period.

Two types assemble bearings and timing gears in the head for liquids with lubricating properties. Bearings and gears are externally assembled for liquids that will not lubricate. Jacketed bodies can be specified for operation above or below normal temperatures. Elements of the pump can be made of any machinable metals to specification.

Standard sizes range from 1 to 8 in. in suction and discharge pipe connections. Several rotor widths are available for desired capacity at direct-connected motor speeds. Engineering data, performance charts and illustrations are included in Bulletin Q-50.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3519 if you write the maker ▼

no coddling pul-leeze

STACON TEMPERATURE REGULATOR*

*Patented

You can install a Farris Stacon Temperature Regulator and forget all about it. You *know* it will operate positively and accurately under *all* conditions and at *all* times.

The Farris Stacon Temperature Regulator is dirt-proof, trouble-free. It operates with unheard of accuracy—to within plus or minus 1 deg. And that's not just under ideal circumstances. It functions with identical accuracy in the worst possible surroundings—provides air-operated sensitivity at self-operated cost.

Here's why: In patented Stacon Regulators, there are no packing glands to leak or bind. The liquid in the bulb flashes to vapor in the power bellows, providing hair-trigger response to move the valve disc.

You'll want complete details on this accurate and economical temperature regulator. Write for Stacon Bulletin 50-100.

Farris Stacon Corporation
482 COMMERCIAL AVE. PALISADES PARK, N. J.

▼ BREVITY—Identify by IEN - 3520 if you write the maker ▼

Hammond of KALAMAZOO says WET

ABRASIVE BELT GRINDERS—POLISHERS

ABRASIVE BELTS
- CUT COOLER
- CUT FASTER
- DO NOT DISCOLOR OR BURN WORK
- IMPROVE FINISH
- STEP UP PRODUCTION

Model VM-6 — WET-n-DRI, 6" Abrasive Belt Grinder-Polisher, Vertical or Horizontal Operation. Independent coolant unit or water main connection.

Model 400 — WET-n-DRI, 4" Abrasive Belt Grinder-Polisher. Floor or Bench Models. Independent coolant unit or water main connection.

Hammond Machinery Builders
1607 DOUGLAS AVENUE • KALAMAZOO, MICHIGAN

▼ BREVITY—Identify by IEN - 3521 if you write the maker ▼

Dick 960 A B Dick 960 A B Dick 960
GRAPH MIMEOTYPE MIMEOGRAPH MIMEOTYPE

NEW A. B. DICK MIMEOGRAPHS

black-on-white **COPIES** or colored copies of anything typed, written or drawn

produced **FAST** on most all paper and card stocks at speeds ranging up to 180 copies per minute

and **EASY** on today's A. B. Dick mimeographs with many new features and improvements for more efficient operation.

WRITE TODAY for full details

A·B·DICK COMPANY
5700 Touhy Ave. • Chicago 31, Illinois
For use with all makes of suitable stencil duplicating products.

▼ BREVITY—Identify by IEN - 3522 if you write the maker ▼

The Answer is often:

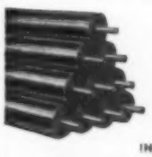
USE

SHAF-TITE* ROLLS

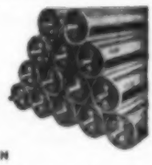
Many Patented Constructions

Choice of

METAL, RUBBER, or WOOD ROLLS



Send For NEW ROLL CATALOG No. 48



INDUSTRIAL ROLL DIVISION
RODNEY HUNT MACHINE CO.
873 Main Street RODNEY HUNT Orange, Mass., U. S. A.
*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 3523 if you write the maker

SQUARE D OIL-TIGHT CONTROL UNITS because-

Proven Oil-tight and coolant-tight by severe tests involving millions of operations.

Flexible. Pushbuttons, selector switches and pilot lights available in wide range of combinations.

Durable. Metal buttons, melamine contact block and double break silver contacts insure long life.

Write for Bulletin 9001-T. Square D Company, 4041 N. Richards Street • Milwaukee 12, Wisconsin

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 3524 if you write the maker

General

Wirebounds cut damage to as low as 1/10th of 1% for A.O. Smith

CUT YOUR PACKING AND SHIPPING COSTS.. WRITE TODAY

GENERAL BOX COMPANY ..

★★★★★ engineered shipping containers

GENERAL OFFICES: 508 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc., Houston, Dallas General Box Company of Mississippi, Meridian, Miss.

BREVITY—Identify by IEN - 3525 if you write the maker

WHICH SOILS ARE HARDEST TO REMOVE?

- ☐ buffing compound residues
- ☐ pigmented drawing compounds
- ☐ oils and greases
- ☐ heat scale
- ☐ tarnish
- ☐ rust, oxides
- ☐ flux residues
- ☐ carbon smuts
- ☐ rust preventives

Technical Service Representatives in Principal Cities of U. S. & Canada

SPECIALIZED INDUSTRIAL CLEANING OAKITE MATERIALS • METHODS • SERVICE

OAKITE PRODUCTS, INC.
16A Thames St., New York 6, N. Y.

Tell me about Oakite methods for removing the following soils:

☐ ALSO send a FREE copy of your booklet "Some good things to know about Metal Cleaning"

NAME

COMPANY

ADDRESS

NEWS NOTES—Continued

"Instructions on care and use of tools"

BREVITY—Identify by IEN - 3526 if you write the maker

SAWING . . Instruction cards form basis of campaign to care for tools

Henry Disston & Sons Inc.
49 Tacony St., Philadelphia 35, Pa.

"Fight Waste" titles new kit of instruction material offered by the company on request to help make tools last. The kit is based on a set of thirty 4 by 6-in. instruction cards, one for each major tool in the company's line such as saws, files, knives. Each card lists common types of tool breakage, the reasons why, and how to prevent or correct such breakage or poor performance. On the back are use recommendations. **A manual** for foremen illustrates the cards, describes the the kit. Posters and stickers are included.

BREVITY—Identify by IEN - 3527 if you write the maker

STEELS . . How stainless steel is used in paper mill equipment described in booklet

Armco Steel Corp.
701-5 Curtis St., Middletown, Ohio

Three sets of flow diagrams are presented in new 12-page booklet, "A Stainless Profit Story for the Paper Industry", to show where stainless-steel parts can be applied. A two-page table lists performance of stainless equipment.

BREVITY—Identify by IEN - 3528 if you write the maker

STEELS . . Cardboard slide selector presents technical data on 21 stainless steels

Carpenter Steel Co.
351 W. Bern St., Reading, Pa.

Relative workability, other properties and heat-treating information are presented in new 9¼ by 4-in. "Stainless-Steel Slide Chart". Once you have set the designation of the desired steel at a window, you can read information on its workability for 18 operations and heat-treat data at two other windows.

BREVITY—Identify by IEN - 3529 if you write the maker

STRAPPING . . New house publication to keep you up to date on steel strapping developments

Acme Steel Co.
2838-42 Archer Ave., Chicago 8, Ill.

"Confab" titles new house publication, intended to promote an informal exchange of ideas on the company's strip steel products which include strapping and stapling. A number of application examples are given in illustrated story form as idea stimulators. Your name will be added to the list.

BREVITY—Identify by IEN - 3530 if you write the maker

TESTING . . New house publication prints news of developments for the laboratory

Emil Greiner Co.
18-28 N. Moore St., New York 13, N. Y.

"Labitems" titles new house publication which the company will send you upon request. One article in the 32-page first issue describes use of the company's Cartesian Manostat in the new Brooklyn-Battery tunnel. Other articles describe new equipment. There is even a chemical crossword puzzle.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3531 if you write the maker

ROTO FINISH

GIVES YOU 5 OUTSTANDING ADVANTAGES for Deburring, Descaling and Finishing Operations

1. Eliminates tedious hand filing, scraping, polishing, deburring, etc. to save many man hours.
2. Provides absolute uniformity in quantity lots.
3. Maintains exacting tolerances on precision parts where no dimensional change is allowable.
4. Imparts a finish mechanically that was formerly considered possible only by hand methods.
5. Low initial cost — requires minimum maintenance. No exhaust systems required.

Send samples for free demonstration

Roto-Finish COMPANY

associated with The Sturgis Products Co.

3701 MILHAM RD., KALAMAZOO, MICHIGAN

ORIGINATORS OF THE ROTO-FINISH PROCESSES

BREVITY—Identify by IEN - 3532 if you write the maker

STOP! INJURIES AND WORK INTERRUPTIONS from falling fluorescent-tube accidents

Economical, easily installed Den-El SAFETY GUARDS hold fluorescent tubes firmly in sockets whenever a sudden jolt or continuous vibration occurs.

Made of resilient stainless steel, permanent installation requires simply tightening nut on a precision-made machine screw. The band that holds tube, as shown in photograph, is easily pulled aside when lamps are cleaned or replaced and resumes hoding position when released.

Two guards are required for each tube. They are made in two sizes: for 48 watt tube at 17c each and 100 watt tubes at 20½c each. Don't wait for accidents to happen! Den-El guards are economical protection against falling glass and possible serious injury in factories shops, offices, stores.

All items shipped direct from Philadelphia.

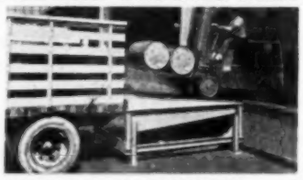
GENERAL SCIENTIFIC EQUIPMENT CO.
2703 W. Huntington Street
Philadelphia 32, Pa.

SAFETY EQUIPMENT FOR EVERY HAZARD

BREVITY—Identify by IEN - 3533 if you write the maker

THIS REVOLUTIONARY NEW LOADING RAMP ADJUSTABLE SELF-CONTAINED

PAYS FOR ITSELF WITH A FEW WEEKS USE!



INSTALLED IN MINUTES...CUTS LOADING TIME BY HOURS!

2 STANDARD SIZES: 6' x 8' 8' x 8' Capacity 20,000 lbs. Other Sizes to Your Specifications

- SETS INTO, OR AT END OF, PRESENT LOADING PLATFORM.
- PLUGS INTO NEAREST 110-VOLT OUTLET.

Hydraulic finger-tip control instantly raises Ramp from level position; no further adjustment required. Deck rides with truck and *automatically* compensates for variations in bed height. Weight on truck reduced to minimum through spring counter-balancing. Here's the time—, money—, and labor-saving answer to faster loading that quickly pays for itself!

DISTRIBUTORS—Some Territories Still Open!

GREEN-PENNY CO.
425 E. Washington Blvd. • Los Angeles 15, Calif.

BREVITY—Identify by IEN - 3534 if you write the maker

Speed Up Production
Secure Greater Uniformity
Save Time, Labor, Fuel

with more than 2,000 manufacturers now using

ROSS INDUSTRIAL AIR SYSTEMS

DRYING ..... BAKING
CURING ..... COOLING
HEAT TREATING ... AGING
CONDITIONING

ROSS HEAT TREATING and AGING OVENS have long been recognized as outstanding in quality and performance. Their record during World War II in the production of aluminum and magnesium castings for aircraft engines and similar equipment recommends them for all heat treating and aging requirements. Write us for descriptive data.

J. O. ROSS ENGINEERING CORPORATION
MANUFACTURERS OF AIR PROCESSING SYSTEMS
444 MADISON AVENUE NEW YORK 22, N. Y.

CHICAGO • DETROIT • BOSTON • LOS ANGELES • MONTREAL • LONDON

BREVITY—Identify by IEN - 3535 If you write the maker

WHEN YOU PUT A LOT OF LITTLE ONES INTO A BIG ONE — MAKE SURE IT'S A

JELLIFF DIPPING BASKET

70 years making Wire Mesh have taught us a lot about this material, its fabrication, and uses.

We make Dipping Baskets of any ductile metal, and in any size and shape your products and process require . . .

Naturally we believe we make them just a little bit better than the other fellows do — and a lot of people who turn to us regularly for their Dipping Baskets seem to agree with us.

So—for Degreasing—Pickling—Plating Anodizing — Washing — Heat Treating — or for just plain Bulk Handling or Storage of small parts in large quantities, let JELLIFF give you a no-cost no-obligation estimate for your next requirement of Dipping Baskets. Send a blueprint or specifications to Department 12.

THE C. O. JELLIFF MFG. CORP.
DIPPING BASKETS · LEKTROMESH · RESISTANCE WIRE · WIRE MESH PARTS · WIRE CLOTH · STRAINERS · FILTERS
SOUTHPORT CONNECTICUT

BREVITY—Identify by IEN - 3536 If you write the maker

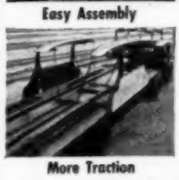
"We can carry twice as many passengers now that we have our ceilings covered with slip-resistant 4-WAY Safety Plate."

For greater safety under foot, in your plant and on your products

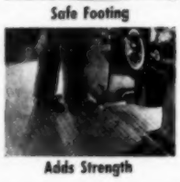
Inland 4-Way® Safety Plate

Easy Assembly

Safe Footing



More Traction



Adds Strength

STOCKED BY LEADING STEEL WAREHOUSES

INLAND

INLAND STEEL COMPANY, Dept. IEN 41
38 So. Dearborn St., Chicago 3, Ill.
Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis and St. Paul.

New Bulletin with New Ideas — Just Cut! Bulletin F1. Complete engineering and application data. Send for it!

BREVITY—Identify by IEN - 3538 If you write the maker

HOIST . . Pneumatic motor design, 250 to 2,000 lb., 11 ft. load lift

Source: DETROIT HOIST & MACHINE CO.
8231 Morrow St., Detroit 11, Mich.

Rotary air motor is employed with the company's Titan worm-drive electric-hoist mechanism to make up this new Type-PT hoist. It is available in five sizes with load capacities at 250 to 2,000 pounds. The smallest unit operates at 80 to 90 fpm. The largest one lifts at 12 to 15 fpm., based on 80 to 90-lb. pressure at the throttle. Assembly weights, without the trolley shown in the illustration, are 95 to 110 pounds. Standard lift is through 11 feet.

The motor is gear connected to the worm-gear drive within the hoist housing. It is controlled at a throttle valve located beneath its housing. This valve includes an exhaust muffler and also mounts a shut-off arm that limits upward movement of the hook block so it cannot strike the hoist housing. Operating speed is adjustable, depending on the throttle opening, as controlled by the operator. Rotating shafts operate on ball bearings. The interior mechanism in the hoist is flood lubricated. A trolley can be supplied to specification.

Overall dimensions are 16½ to 17¼ in. in length by 10 in. in width by 22 to 24 in. in minimum distance between hooks or 20 to 22 in. in minimum distance from the load hook to the underside of a supporting I-beam when the trolley is employed. No brake is required to hold the load due to the worm-gear drive in the hoist mechanism.

BREVITY—Identify by IEN - 3539 If you write the maker

PAINTING . . Pressure feed brushes are controlled by operating a valve

Source: HANLON & GOODMAN CO.
4-12 Riverside Ave., Belleville 9, N. J.

Jet-Flo, a new design, has been added to the Stream-Flo pressure-feed paint brush, previously described IEN-4300-50. Both units connect through ¼-in. hose lines to a pressure supply for paint and are equipped with control valves to regulate the flow into an inner distributing brush and from there to the main brush bristles. The valve is built into the brush handle in the Stream-Flo unit. In the new Jet-Flo design the valve is mounted in the hose line a short distance from the handle end. The line is available in 2½ in. oval brush and in 3, 3½ and 4½ in. flat brushes. Five feet of ¼-in. hose and fittings are supplied with each unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3540 If you write the maker

Save with a BANTAM®
loads materials...digs holes...cuts trenches

Brief Facts
- ⅛ yd. — 5 ton cap.
- Mounts on new or used truck
- Handles 50' boom, 29" magnet, multiple attachments
- JOB-PROVED — nearly 2000 Bantams in use, nation-wide distributor service

Clip this ad now!

Mail today with your letterhead for complete details showing how you can speed work, cut costs, with a truck-mounted BANTAM crane. Schield Bantam Co., 254 Park St., Waverly, Iowa.

*Price subject to change without notice

SCHIELD BANTAM
Costs less . . . travels 35 m. p. h.
GETS MORE JOBS DONE

BREVITY—Identify by IEN - 3541 If you write the maker

Sta-Warm compound melters "hold extreme accuracy in heat"

● Expendable wax patterns being cast in machined die.

Controlling the fluidity of wax with variable thermostat on Sta-Warm model WV compound melters is all in the day's work at Precision Metalsmiths, Inc., Cleveland, Ohio.

Here expendable patterns of wax (about 50% paraffin base) are made by pumping melted material directly from Sta-Warm melters into cast or machined dies through upright injection nozzles.

Uniform heat under accurate temperature control provides soft or fluid wax as required.

"Your Sta-Warm melters hold extreme accuracy in heat" reports R. H. Miller, President, Precision Metalsmiths, Inc. If you want to heat compounds *uniformly* to *close* tolerances or solve unusual melting or dispensing problems, write Sta-Warm today outlining your requirements. No obligation.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 3542 If you write the maker

Severance CHATTERLESS TOOLS HIGH SPEED CARBIDE

Winning their way on job after job, they are carefully designed to preclude chatter and can be depended on to produce superior finishes.

Severance CHATTERLESS COUNTERSINKS

STANDARD TYPE — Stocked in 13 diameters up to 2" and in 30°, 41°, 45°, and 60° angles (with C/L).

Sizes 1" and larger stocked also threaded for shanks — tapered or straight — in various sizes.

Use CARBIDE for tough jobs or high production.

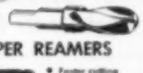
HEAVY DUTY TYPE — Features longer shanks having a tang drive. Full range of sizes and angles.

HEADQUARTERS FOR COUNTERSINKS, REAMERS, SEATING TOOLS, and SPOTFACERS that preclude chatter.

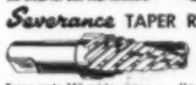
Severance CHATTERLESS BALL SEAT REAMERS

Standard and Heavy Duty Types
8 sizes each.
Made also for shaped cavities — as ordered.

BALL NOSE DRILLS — In corresponding sizes bog out the stock for Ball Seat Reamers.



Severance TAPER REAMERS



- Faster cutting
- Better finishing
- Shear-cut teeth

Tapers up to 15° quickly supplied from stock — up to 1½" diameter x 2¾" long.

Unexcelled for holes having keyways, ports, splines, cross holes, etc.

Write for Catalog 16

SEVERANCE TOOL INDUSTRIES, Inc.
740 Iowa Ave. Saginaw, Michigan

BREVITY—Identify by IEN - 3543 If you write the maker

if you have a problem of misalignment

This new book will be a big help. It contains complete details on the entire Baldwin-Rex line of flexible couplings—Tru-Flex, Semi-Flex, Twin-Flex, Compound and Floating Shaft types. It gives you the facts on why Baldwin-Rex Couplings are truly flexible, are shock absorbing without backlash and are easy to install. The book includes all specifications, prices and horsepower tables.

Just use the coupon to send for your free copy today.

Baldwin-Duckworth Division of Chain Belt Company
358 Plainfield Street
Springfield 2, Mass. 51-408
Please send me Flexible Coupling Bulletin.
Name.....
Company.....Dept.....
Address.....
City.....State.....

BALDWIN·REX

BREVITY—Identify by IEN - 3544 If you write the maker

DELTA® RADIAL SAW

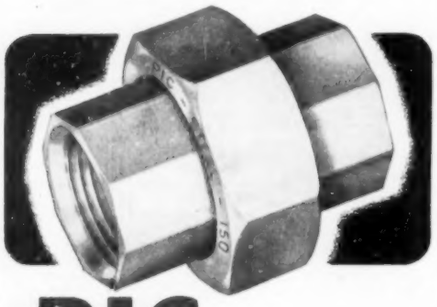
Only Delta gives you fully usable 360° Radial Action!

- You get full 360° miter capacity — don't need other tools to make low-pitch cuts.
- You handle work only once —don't have to turn over long boards for left-hand cuts.
- You mark material once.
- You angle-dado from 0° to 90° right and left.
- You get complete operator safety — saw blade never goes off the table.

Send for catalog M-50 and booklet, "Unlimited Applications."

DELTA POWER TOOL DIVISION
Rockwell
Manufacturing Company
615 DE. Vienna Ave., Milwaukee 1, Wisconsin

BREVITY—Identify by IEN - 3545 If you write the maker



PIC STEEL UNIONS ARE 100% ZINC PLATED — ESPECIALLY DESIGNED FOR USE ON ORIGINAL EQUIPMENT

Here's a *quality* steel union that more and more manufacturers are choosing for installation on their original equipment. Attractive, bright — completely rust protected with zinc plating *even* on the threads, this unusual union has ends of heavy steel pipe coupling stock and a special wedge-type bronze seat. Easy installation with either open ended or pipe wrenches. This 150# PIC union sells for less than a galvanized union—no more than a black malleable union.

WRITE FOR FREE SAMPLES!

DART UNION COMPANY PROVIDENCE 5, R. I.

BREVITY—Identify by IEN - 3546 If you write the maker

You can have privacy and hear well too

In noisy offices a Burgess-Manning Acousti-Booth provides a "zone of quiet"... you can hear clearly in its hushed interior. A thick blanket of sound-absorbent fabric lining the walls traps the noise. Modern design. Movable. Floor and wall models. Wall model suitable for desk.

Quiet telephoning here

Mail Coupon For Free Booklet

Burgess-Manning Company
743-A East Park Ave., Libertyville, Ill.
Please send me your booklet describing Burgess-Manning Acousti-Booths.

Name
Firm Name
Street City State

NEWS NOTES—Concluded

"Useful information on steam traps"

BREVITY—Identify by IEN - 3547 If you write the maker

STAMPINGS . . Bulletin traces progress of a small stamping from tool design to production

John Volkert Metal Stampings Inc.
222-36 96th Ave., Queens Village 8, N. Y.

Pictures and text in new 16-page booklet tell how a small stamping for electronic use was engineered, tooled and produced by the company on a 16-station progressive die. Title is "3-Way Facilities for Precision Stampings." The booklet illustrates facilities, shows other examples of dies and parts made.

BREVITY—Identify by IEN - 3548 If you write the maker

TRAPS . . Useful information booklet on steam trap problems and how to solve them

V. D. Anderson Co.
1931 W. 96th St., Cleveland 2, Ohio

Revised edition of "Solving Steam Trap Problems" is a 36-page booklet that describes how to select and apply traps to unit heaters, pipe coils, kettles, autoclaves, water heaters, process equipment. Pipe diagrams and maintenance instructions are included with data on the company's line.

BREVITY—Identify by IEN - 3549 If you write the maker

TUBES . . Pocket booklet of definitions employed in manufacture and application of steel tubing

Babcock & Wilcox Tube Co.
4027-31 Fourth Ave., Beaver Falls, Pa.

Bulletin TB-335 designates new 20-page booklet that defines terminology applying to steel tubing. The terms are grouped as to dimensions, grades of steel, manufacturing methods, tube types, surface finish, heat treatment, physical and mechanical properties.

BREVITY—Identify by IEN - 3550 If you write the maker

VALVES . . Two selection nomograph charts, one for steam valves, the other for butterfly valves

Fischer & Porter Co.
42 County Line Road, Hatboro, Pa.

Downstream pressure, pressure drop, steam flow rate, steam conditions, valve port area and body sizes are the factors considered in one of two nomograph charts printed on new 2-page Catalog 70-S. Three sample calculations are given. A second chart for size of butterfly valves is on the back.

BREVITY—Identify by IEN - 3551 If you write the maker

VENTILATING . . Maintenance suggestions in booklet on how to take care of fans and blowers

New York Blower Co.
3180 Shields Ave., Chicago 16, Ill.

Instructions in new 16-page booklet, "How to Get the Most Out of Your NYB Equipment," concern installation and inspection of new equipment, bearing lubrication, motor lubrication, maintenance suggestions, notes on specific equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3552 If you write the maker

SAVE Maintenance AND Towel Costs WITH

Sani-Dri ELECTRIC Hand or Hair Dryers

Save valuable maintenance time and eliminate continuing towel expense. New, improved features make Sani-Dri faster drying . . . provide quick, automatic hand or hair drying service 24 hours a day year after year! Sani-Dri is a permanent solution to washroom sanitation and drying problems—and SAVES UP to 85% of WASHROOM COSTS!

All Sani-Dri Electric Dryers are GUARANTEED, and have carried the Underwriter's Seal of Approval for over 18 years!

SEND FOR NEW BROCHURE showing all models and installation pictures.

Distributors in Principal Cities
THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
3441 Commonwealth Ave. • North Chicago, Ill.

BREVITY—Identify by IEN - 3553 If you write the maker

The "MASTER" Line OF MATERIALS HANDLING EQUIPMENT

The Most Complete Line of Materials Handling Equipment on Wheels

Buy the type of machine that fits your job.

Write TODAY for one or more of these new catalogs . . .

(24) Master JackLift Electric Trucks and JackStacker Electric Trucks.
(25) SpaceMaster Electric Fork Trucks.
(26) Master JackLift Trucks, Hydraulic and Mechanical Handlift Trucks, WeldMaster Skid Platforms.
(27) SpaceMaster Gas Fork Trucks.
(28) PowerMaster Stackers, Lifters, Handy Hoisters, Portable Cranes.
(29) FloorMaster Trucks.
(30) TotoMaster Gas Trucks.
(31) LoadMaster Racks for Pallet, Platform, Barrel, Drum, Bin, Unit Loads.

The "MASTER" Line

LEWIS-SHEPARD PRODUCTS INC.
142 Walnut Street, Watertown 72, Massachusetts
Midwest Plant: Crawfordsville, Ind.
Sales & Service in Principal Cities

BREVITY—Identify by IEN - 3554 If you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

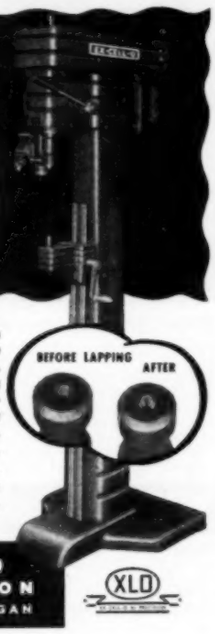
Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

▼ BREVITY—Identify by IEN - 3556 If you write the maker ▼

For Precision Between Centers

EX-CELL-O CENTER LAPPING MACHINES



Meeting today's precision standards requires accurate center holes in the work. Ex-Cell-O Center Lapping Machines correct inaccuracies of center holes that affect the quality of all subsequent operations performed between centers. Fully described in Bulletin 40271—yours for the asking.

51-11

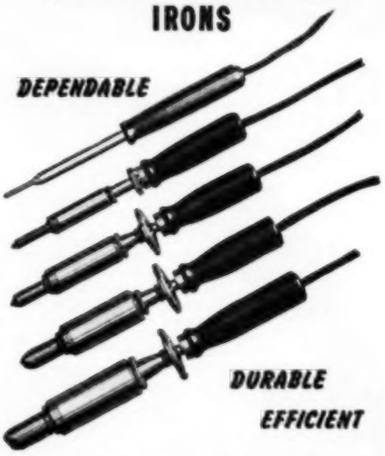
EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

XLO

▼ BREVITY—Identify by IEN - 3557 If you write the maker ▼

American Beauty

ELECTRIC SOLDERING IRONS



are sturdily built for the hard usage of industrial service. Have plug type tips and are constructed on the unit system with each vital part, such as heating element, easily removable and replaceable. In 5 sizes, from 50 watts to 550 watts.

TEMPERATURE REGULATING STAND

This is a thermostatically-controlled device for the regulation of the temperature of an electric soldering iron. When placed on and connected to this stand, iron may be maintained at working temperature or through adjustment on bottom of stand at low or warm temperature.

Write for Catalog Sheets, Form No. 204-CP. Dept. SI-2

120-3

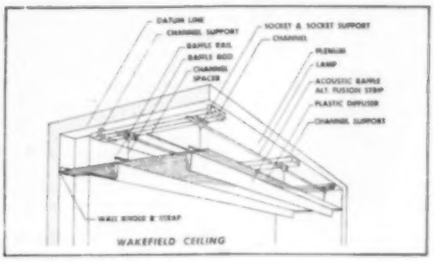
Since 1894 Always Dependable

AMERICAN ELECTRICAL HEATER CO.
DETROIT 2, MICHIGAN

▼ BREVITY—Identify by IEN - 3559 If you write the maker ▼

LIGHTING . . Luminous ceiling for adjustable glare-free illumination

Source: F. W. WAKEFIELD BRASS CO.
River Road at B. & O., Vermilion, Ohio



Wakefield Ceiling is a new assembly of suspended fluorescent fixtures and, about 12 in. below them, translucent corrugated Plexiglas sheets with optional perforated acoustical baffles. These baffles are wedge-shaped in cross section. They are filled with sound-absorbing material and are positioned at 36-in. intervals. The fixtures are installed and connected so light intensities can be adjusted at a control switch for several levels of illumination in any given area ranging up from 50 footcandles.

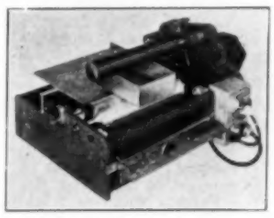
The plastic sheets transmit approximately 70 per cent of the light from the fixture lamps. The complete assembly presents a neat uniform sound-absorbing ceiling that conceals pipes, ducts and wiring. The company has prepared an assembly of mimeograph sheets describing the ceilings in detail. Copies are available on request.

Drawings of areas to be illuminated can be submitted to the company to be interpreted by job engineers into layouts, bills of material and quotations. The work is installed by licensed operators. A complete ceiling is specified to include the acoustical baffles when they are desired. These baffles are under license from Bell Telephone Laboratories.

▼ BREVITY—Identify by IEN - 3560 If you write the maker ▼

SPREADING . . Gluing machine applies adhesive to paper box bottoms

Source: POTDEVIN MACHINE CO.
1285 38th St., Brooklyn 18, N. Y.

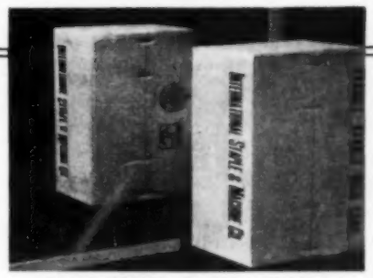


New machine employs a motor-driven roll and upper guide-roll idler to apply adhesive to the bottoms of boxes in manufacturing platform-type boxes. The machine will take boxes to 3-in. in height and is available in three sizes with width capacity at 6, 8 and 12 inches. Drive is by a ¼-hp., 110-volt ac. motor. Overall dimensions are 10½ by 32 by 11½ inches.

Adhesive feeds from a supply trough over a doctor roll to the stainless-steel spreading roll. It is maintained at a required temperature by a thermostat. Thickness of the adhesive coating can be adjusted.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3561 If you write the maker ▼



HOW MUCH HARM DOES A DAMAGED SHIPMENT DO?

● Damage claims, loss of good will, inconvenience—these are known factors to everyone—everyone, that is, except those who have overcome these difficulties by means of an International Retractable Anvil Staple Machine.

In this day and age of defense orders and material shortages, damaged shipments can very well become catastrophic.

Protect your shipments by closing your filled cartons from the outside, tops and bottoms simultaneously, with an International Retractable Anvil Staple Machine.

INTERNATIONAL STAPLE AND MACHINE COMPANY
HAVERTOWN 5, PA.
FACTORIES IN HERRIN, ILL. AND HAVERTOWN, PA.
DISTRIBUTORS IN PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 3562 If you write the maker ▼

GET THE Thor STORY ON PORTABLE ELECTRIC SANDERS

WRITE FOR CATALOG E-2

Five popular sizes and speeds . . . every one packing 50 percent more power than any tool in its class . . . Thor Silver Line Disc and Belt Sanders do any sanding job better – at lower cost! Ask your Thor distributor for a demonstration.

Belt Sanders
Bench Grinders
Drills
Grinders
Hammers
Impact Wrenches

Thor PORTABLE POWER TOOLS

Nibblers
Nut Setters
Polishers
Sanders
Saws
Screwdrivers

INDEPENDENT PNEUMATIC TOOL CO., AURORA, ILL.

▼ BREVITY—Identify by IEN - 3563 If you write the maker ▼

Aeroquip

FLEXIBLE HOSE LINES CUT COSTS

The "Aeroquip Idea" saves time, saves money, reduces inventory. To make your own Hose Lines, simply cut bulk hose to the required length and attach an Aeroquip reusable fitting.

AEROQUIP CORPORATION
JACKSON, MICHIGAN

Eight strategically located sales offices and warehouses plus a nationwide dealer distributor organization make Aeroquip Products quickly available everywhere.
AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

▼ BREVITY—Identify by IEN - 3564 If you write the maker ▼

you save 50% in TANK HEATING and COOLING with PLATECOIL

★ You SAVE 50% in tank SPACE
★ You SAVE up to 50% in initial COST
★ You have 50% LESS WEIGHT to handle
★ You SAVE 50% in maintenance LABOR as plates are changed from outside the tank without dumping solution

. . . besides all these you get faster heating or cooling. Take advantage of the engineering assistance offered by Kold-Hold to help you with your heat transfer problems.

Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

BREVITY—Identify by IEN - 3565 if you write the maker

never a leak WITH Plasgon

Plasgon — the *flexible* pipe joint cement — is *easy to apply* . . . just squeeze it out of the tube.

Plasgon stays flexible . . . continued shocks and jars won't bother it.

Plasgon is proof against all common solvents . . . *oil, gasoline, kerosene, steam, water.*

Plasgon stands heat up to 350° F . . . resists considerable pressure.

write today for *Free Sample* of Plasgon and complete information.

Pipe joints sealed with Plasgon *can't* leak.

SAMUEL CABOT, Inc.
433 Oliver Bldg., Boston 9, Mass.

BREVITY—Identify by IEN - 3566 if you write the maker

Atkomatic Valves
Electrically Operated

★ Whether you use solenoid valves in your plant or as part of your product, you'll find the right valve in the ATKOMATIC line. These sturdy, compact valves are built in a wide selection of types for pressures up to 3000 pounds. Thousands of ATKOMATIC users find that they assure smooth, trouble-free operation over a long period. Write today for facts about ATKOMATIC.

ATKOMATIC VALVE COMPANY, INC.
1255 ROOSEVELT AVE. • INDIANAPOLIS 7, INDIANA

Send for Literature

BREVITY—Identify by IEN - 3567 if you write the maker

★ free 1951... ALLIED 212 PAGE CATALOG

• world's largest stocks of ELECTRONIC SUPPLIES FOR INDUSTRY

COMPLETE EXPERT INDUSTRIAL SERVICE

Send today for ALLIED's complete, up-to-date 1951 Buying Guide to *everything* in electronics for industrial application. Rely on ALLIED for the world's largest stocks of special tubes, parts, test instruments, tools, amplifiers, intercom and paging systems—complete quality lines of electronic supplies. ALLIED's expert Industrial Division saves you time, effort and money. Send today for your FREE copy of the 1951 ALLIED Catalog.

EVERYTHING IN ELECTRONICS FROM ONE RELIABLE SOURCE

ALLIED RADIO
Send for FREE CATALOG

833 W. Jackson Blvd., Chicago 7, Illinois
☐ Send FREE 1951 ALLIED Catalog No. 126
Name
Address
City Zone State

BREVITY—Identify by IEN - 3568 if you write the maker

FILING . . Reciprocating machine 5 in. stroke, 17 in. tilting work table

Source: CONNECTICUT TOOL & ENGINEERING CO.
542-46 Iranistan Ave., Bridgeport 5, Conn.

New machine is driven by a ½-hp. motor and variable-speed transmission for operation at 75 to 350 strokes per minute. It operates files, saws, hones through a 5-in. stroke. The machine mounts a 17-in. counterbalanced table that can be tilted to file clearances on press tools or set to make square cuts. A compressor and piping keeps the work clear.

Clamps at the two sides of the table hold the work in place. A drive mechanism employing a segment and gear control with a throw-out clutch assists the operator in stroke adjustment. The unit is known as Model F-3 Williams punch and die-making machine.

BREVITY—Identify by IEN - 3569 if you write the maker

BRAZING . . Iron-copper paste provides source of copper for joining

Source: GLIDDEN CO.
11041 Madison Ave., Cleveland 2, Ohio

Produces clean strong joints

Cubond trade names a new copper brazing paste containing a small amount of iron. Action of the paste minimizes running from the joint and so conserves copper. Thickening effect, inherent in the material, prevents excess solidity which sometimes "blinds" a screen. Clearance up to 1/32 in. can be filled. Drops of excess copper are not formed.

BREVITY—Identify by IEN - 3570 if you write the maker

MILLING . . Carbide cutters, eight shapes, ¼ in. shanks, wood box

Source: SEVERANCE TOOL INDUSTRIES INC.
740 Iowa St., Saginaw, Mich.

Set No. 40 in the company's Di-Car line of midget carbide milling cutters includes a set of eight cutters in various shapes, all with ¼-in. shanks for general tool and die work. Each is made of a grade of carbide that resists flaking and chipping when employed on hardened or unhardened dies.

Finish is comparable to that obtained when using mounted abrasive wheels. Since each is made of solid carbide it can be reground repeatedly. The company maintains a regrinding service for this purpose at its home plant.

Users of the company's carbide tools can return worn tools for regrinding at a cost considerably less than that for a new cutter. No priorities are involved.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3571 if you write the maker

READINGS AT A GLANCE

for BOTH AC and DC

Instant Current Measurements Without Breaking Circuit or Insulation . . .

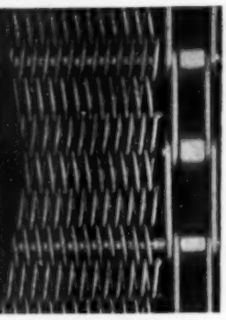
You can read 'em fast and accurately with the Columbia Tong Test Ammeter by merely clamping the tongs around the electrical conductor. Tong Test is the only instrument of its type that can measure both AC and DC. Cannot burn out for it has no windings. Safe, convenient and light in weight. Interchangeable scale ranges up to 1000 amperes. Five types to accommodate cables up to 3⅞", bus bars up to 4½" x ½". Voltage readings, too, with the Voltor Attachment.

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

BREVITY—Identify by IEN - 3572 if you write the maker

WISSCO BELTS



step up production—cut down handling costs

Faster, uninterrupted production . . . in heat treatment of metals, glass and ceramics; and in processing of foods, rubber, textiles, veneers and numerous other products . . . is assured with dependable, long-wearing Wissco Belts.

Fabricated in special weaves and alloys—with or without chain edges—Wissco Metal Processing Belts have high resistance to corrosion, abrasion and temperature extremes.

Write for illustrated booklet describing the many uses and cost-cutting advantages of Wissco Belts.

WISSCO METAL PROCESSING BELTS CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Office and Plant—56 Sterling Street, Clinton, Massachusetts
Executive Office—500 Fifth Avenue, New York 18, New York
Sales Offices—Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • New York • Philadelphia
Pacific Coast—The California Wire Cloth Corporation, Oakland 6, California

BREVITY—Identify by IEN - 3573 if you write the maker

ALCOA ALUMINUM TUBE

"Figure it per foot"

EASY TO FORM
EASY TO FLARE
EASY TO HANDLE

When you figure the cost of a tubing installation—figure it per foot. You'll find Alcoa Tube will save 40% over the price of other corrosion-resistant tube. In use you'll find Alcoa Tube an excellent performer—strong, light and highly resistant to corrosion.

Look under "aluminum" in your classified telephone directory—call your Alcoa Distributor.

Due to rearmament, aluminum is not available for unrestricted industrial use. However, when a tubing installation is considered, extensive engineering and planning are required. This advertisement is intended as an aid to your planning.

Aluminum fittings are made by nationally known manufacturers

Free Write for Illustrated Book
Get Alcoa's new booklet, "Instrument Lines of Alcoa Aluminum". Illustrated and crammed with facts. ALUMINUM COMPANY OF AMERICA, 836D Gulf Bldg., Pittsburgh 19, Pa.

ALCOA *Coiled Tube* ALUMINUM

BREVITY—Identify by IEN - 3575 If you write the maker

Bag Closing Machines for Every Need . . .

. . . from UNION SPECIAL'S Complete Line! . . .

For lower production costs . . . stronger, neater closures . . . ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! In the Union Special line, it's easy to find the right unit to meet your particular requirements: 25 different styles of machines! 10 styles of sewing heads! For any kind and size of bag—paper, cotton, burlap, or jute. ASK FOR ILLUSTRATED BULLETIN No. 200.

SEND FOR THIS ILLUSTRATED BULLETIN!

Union Special MACHINE COMPANY
410 North Franklin St.
Chicago 10, Illinois

BREVITY—Identify by IEN - 3576 If you write the maker

TRUCKS AND TRAILERS MOVE FASTER, EASIER ON NEW WHEELS BY ELECTRIC

Modernize baggage-trucks, industrial trailers, floor trucks, mail carts and other portable equipment with new ELECTRIC wheels **for faster, easier handling.** There is an ELECTRIC wheel for every job.

Our 65 years of engineering "know-how" assures you of top performance from ELECTRIC equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles—steel tires, molded-on-tires, or pneumatic tires. All types are available in a full range of sizes.

Our experienced engineers are always at your service.

WRITE FOR COMPLETE INFORMATION

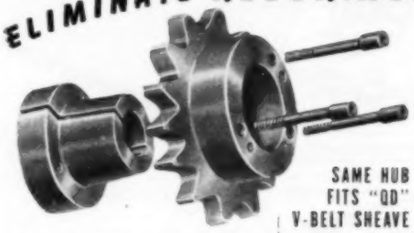
ELECTRIC WHEEL CO.
2814 SPRUCE · QUINCY, ILLINOIS

BREVITY—Identify by IEN - 3577 If you write the maker

FORT WORTH QD Roller Chain SPROCKETS WITH TAPERED SPLIT HUB

PATENT APPLIED FOR

ELIMINATE REBORING!



SAME HUB FITS "QD" V-BELT SHEAVE

Speed changes are simplified and "spare" sprockets can be carried more easily.

If your favorite distributor doesn't stock this new item, tell him about it. He'll reward you with better service.

"OFF THE SHELF" SERVICE AVAILABLE FROM INDUSTRIAL DISTRIBUTORS

Reboring of stock bore sprockets to fit various shafts is eliminated due to the various bores available in the QD hub. Installation and removal from the shaft is made easy by the tapered fit of the hub and sprocket. Hub assembly grips the shaft equivalent to a "press fit."

Catalog explaining additional advantages and construction details will be furnished on request.

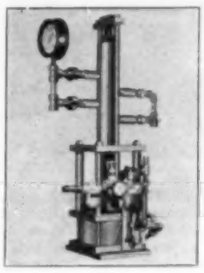
OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH STEEL AND MACHINERY CO.
3600 McCART, DEPT. 24, FORT WORTH, TEXAS

BREVITY—Identify by IEN - 3578 If you write the maker

PUMP . . Pneumatic hydraulic for low volume high pressure output

Source: ALDRICH PUMP CO.
20 Gordon St., Allentown, Pa.



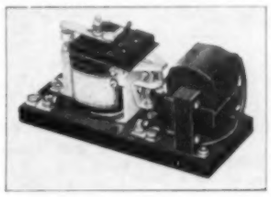
New design of the company's Aldrich-Lytle hydro-pneumatic pump, previously described IEN-906-47, replaces the original 8 by 7-in. double-acting air cylinder with one measuring 10 in. in diameter and providing a 3-in. stroke to the double-acting yoke-design hydraulic cylinder mounted above it. This latter cylinder is available with pistons measuring ⅝ to 3 in. in diameter. Output pressure capacity, based on 100-lb. air pressure, ranges from 1,040 lb. with the 3-in. piston to 23,950 lb. with the ⅝-in. units. The pump stands about 50 in. in greatest height with the stroke up. Its base measures 14½ by 10½ inches.

Two designs of the hydraulic cylinder include a Series 1528 with built in valves and pistons from ⅝ to 1½ in. in diameter and Series 1527, as shown in the illustration, with external valves and pistons from 1⅜ to 3 in. in diameter. Equipment includes an air-intake filter, lubricator, reducing valve and pressure gage on the pneumatic cylinder with an operating valve for the reversing action controlled by the pneumatic-piston movement. A hydraulic pressure gage is supplied for the outlet side of the hydraulic cylinder. The pump starts upon opening the air valve with action continuing until capacity pressure has been filled up. Then the pump stalls or creeps to hold this pressure.

BREVITY—Identify by IEN - 3579 If you write the maker

RELAY . . Voltage-sensitive unit switches the circuit on voltage drop

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.



Bulletin 401 is a new assembly, on an insulating base, of the company's Bulletin-130 or 103 ac. magnetic relay and a saturable reactor connected in series with the relay core. The reactor causes the relay contacts to open and close in the event of a small voltage change across the series combination. This makes the relay suitable for protective application against low line voltage on ac. motors to 2 hp. It applies also for circuit switching in the event of voltage drop in the connected circuit to a standby power source or other active circuit where voltage is normal.

Nominal coil rating is 115, 230, 440 volts on 60-cycle ac. for a heavy-duty design. It is 115 and 230 volts for a light-duty assembly. The relay with 115-volt rating picks up at 105, drops out at 95 volts. Contacts in the heavy-duty unit rate 25 amp. on 230-volt, 60-cycle ac. The relay is characterized by chatter-free action. Base dimensions are 2¼ by 4⅝ in. in the light-duty unit, 2½ by 6 in. in the heavy-duty design.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3580 If you write the maker

From the seven basic Clair designs, a custom-made machine can be developed to give greatest efficiency in your surface finishing operation. With totally enclosed, abrasion-proof hydraulic circuits and adjustable controls, Clair Machines provide the precision and trouble-free operation necessary for efficient surface finishing on a production basis.

Write for technical data

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

BREVITY—Identify by IEN - 3581 If you write the maker

CASH-ACME Valves DEMANDED BY INDUSTRY Everywhere

water heater manufacturer specifies **CASH-ACME**

Type "BH-TL" Revolving Hand Relief Valve

"Convinced of CASH-ACME Automatic Valve quality and consistent performance under pressure, one of the largest manufacturers of automatic hot water heaters installs this better relief valve on all their products. It protects them, it protects their customers when CASH-ACME is on the job. Let us tell you about the growing number of industries depending on CASH-ACME. Write for literature describing the part CASH-ACME Automatic Valves can play in the successful operation of your products.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 3582 If you write the maker

BRADLEYS HELP MAKE THE PLANT . . . . . A GOOD PLACE TO WORK

Adequate facilities for washing are now considered important by managements. Such facilities include sanitary Bradley Washfountains as pictured above.

Bradleys Save Water and Installation Cost

One hot and one cold water supply and one drain are the only connections required for a Bradley that serves up to 10 workers simultaneously.

There are no faucets to touch, the spray of water being supplied by the central sprayhead. Other advantages are explained in our Catalog D-713 . . . Why not write for a copy now . . . BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan St., Milwaukee 1, Wisconsin.

Bradley washfountains

Write for Illustrated Catalog D-713

Distributed Through Plumbing Wholesalers

BREVITY—Identify by IEN - 3583 If you write the maker

buell KNOWS DUST RECOVERY

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Suite 5050, 70 Pine St., New York 5, N. Y.

buell

Engineered Efficiency in Dust Recovery

BREVITY—Identify by IEN - 3584 if you write the maker

M34 POWER *Belongs in your plant*

Abrasive's M34 Surface Grinder puts power where it does the most good — into the grinding wheel. The 6" segmental type grinding wheel is direct driven by a 5 HP, 3450 R.P.M. Pope Motorized Spindle. There is no friction loss due to belting, gearing, chains, or other power-consuming types of drives. M34 is ideal for precision grinding of flat dies, washers, punches, spacers, parallels, chasers, raising blocks, etc., in sizes up to 24" x 8" x 12" high.

For complete details, write ABRASIVE MACHINE TOOL CO., 18 Dunellen Road, East Providence 14, Rhode Island. Distributors Throughout The World.

Abrasive Quality is Reflected in the Finish of Your Product

ABRASIVE ACCURACY BOOSTS PRODUCTION

BREVITY—Identify by IEN - 3585 if you write the maker

VAC-IT does all your cleaning JOBS

The durable Doyle Vac-It is constructed to handle any cleaning job in your plant efficiently and without the necessity of changing parts. Wet and dry cleaning jobs are all the same to the Vac-It. Dirt and dust are removed from plant and office floors and walls . . . overhead pipes, production line machinery and installations are quickly cleaned and kept free from clogging dirt and metal scraps with the Doyle Vac-It and Doyle equipment. The Vac-It does not push dirt around . . . **it picks it up and removes it from the plant.** The powerful suction of the Doyle Vac-It also recovers lubricants, coolants or water at the rate of 720 gallons per hour.

Vac-It will make all your cleaning jobs easier, faster and less costly.

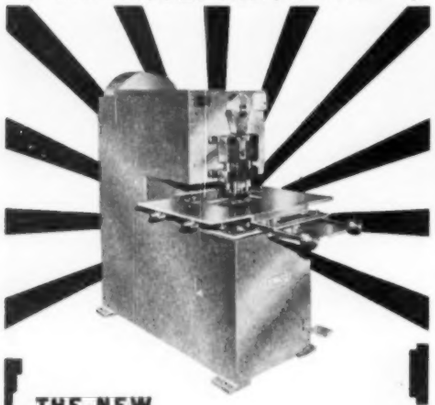
Write for complete data today

Doyle VAC-IT

DOYLE VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

BREVITY—Identify by IEN - 3586 if you write the maker



THE NEW

SEMCO NIBBLER PRESS

PUNCHES HOLES ANY SHAPE — ANY SIZE UP TO 12" X 4½" AT ONE SETTING.

NO SPECIAL DIES ARE NEEDED

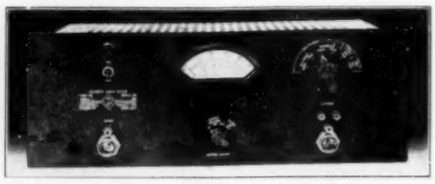
Write for latest literature, prices and information to—

SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET, ELIZABETH, N. J.

BREVITY—Identify by IEN - 3587 if you write the maker

TESTING . . Electronic amplifier, frequency from 20 to 3,000,000 cycles

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.



Type 1233-A is a new power amplifier providing a maximum of 15-watt output on approximately .2-volt input. It is suited for use in a laboratory, also for driving a supersonic generator, exciting a broadcast antenna to measure deflection-type instruments, and as the amplifier for oscilloscope deflection. It can drive a Type 1931-A modulation monitor when used with an antenna and tuned input to monitor remote transmitting equipment.

Three ranges are 20 cycles to 20 kc., 20 kc. to 1.5 mc. and 20 cycles to 3 mc. Overall dimensions are about 19½ by 14¼ by 7½ inches. Operation is on 110-volt, 40 to 60-cycle ac. List price of the new amplifier is $525.

BREVITY—Identify by IEN - 3588 if you write the maker

PAINTING . . Silicone base aluminum stands up in heat to 1,000 deg. F.

Source: MIDLAND INDUSTRIAL FINISHES CO.
1948 E. Water St., Waukegan, Ill.

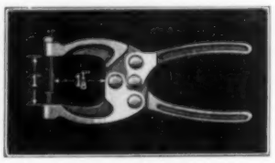
For use on metal surfaces

Sicon Aluminum is new designation following recent improvement for the Mico silicone-base paint previously described IEN-9273-48. The new material is packaged in 1 to 55-gal. containers. It can be applied by brush, dip or spray. It dries in the air or can be forced dried. Typical applications include protection for the metal surfaces of furnaces, heaters, ovens, sterilizers, oil and gas burners, mufflers, tail pipes, engines, chimneys, boilers.

BREVITY—Identify by IEN - 3589 if you write the maker

CLAMP . . Plier type toggle design has 1⅛ in. throat, weighs 5 ounces

Source: DETROIT STAMPING CO.
342 Midland Ave., Detroit 3, Mich.



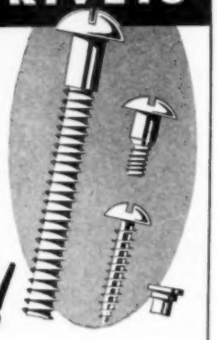
No. 424 is a new plier-type clamp with forged-steel handles and jaws and with bearing pins made of stainless steel. Overall length is 4½ in. Adjustable grip capacity is 1 inch. The clamp has been designed to assist in sheet-metal assembly and to hold metal, wood or plastic parts during machining, welding and joining operations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3590 if you write the maker

Beaver·Bilt

SCREWS STUDS · RIVETS



Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS

Prompt Delivery!

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

Beaver Industries
METAL FASTENER DIVISION
1300 WEST ADAMS STREET, CHICAGO 7, ILL

BREVITY—Identify by IEN - 3591 if you write the maker

BOSTON Gear SPROCKETS *Put Money In Your Pockets!*

Roller chain costs money—is *increasingly hard to get.* Cheaply made sprockets with carelessly cut teeth chew up chain *fast*—reduce its life 20% or more—waste power, too.

Check these losses against the small "saving" in first cost between a "bargain counter" sprocket and a sprocket of genuine BOSTON *Gear* quality.

BOSTON *Gear* Sprockets and Chain cover a complete range of chain drive service from "flea" power to forty horsepower.

BOSTON Sprockets are cut with the same care and precision as BOSTON Gears.

It pays to standardize on BOSTON—readily available from stock at 80 Authorized Boston Gear Distributors—one near you.

Boston Gear Catalog No. 55 contains complete information and prices on over 4000 stock items. Write for free copy.

BOSTON Gear stocks are Near

BOSTON GEAR WORKS
63 HAYWARD ST., QUINCY 71, MASS.

BREVITY—Identify by IEN - 3592 if you write the maker

NEW-and Real News!

a genuine **MAGNAFLUX*** portable **INSPECTION UNIT** for **$485** complete

Locates surface and sub-surface defects in shafts, drives, links, etc. by magnetic particle inspection

Offers big savings by making maintenance and safety inspection positive—preventing production stoppages before they happen. No other unit under $1400 approaches its sensitivity! Built by the pioneers and originators of magnetic particle inspection. Magnetizes any shape. Magnetizing current is *both* AC and DC from 110 volt AC line. Write for bulletin today.

Price includes basic equipment and full day's personal instruction by Field Engineer.

**Magnaflux and Magnaglo are U.S. Registered, trademarks of Magnaflux Corporation*

MAGNAFLUX CORPORATION
5914 Northwest Highway • Chicago 31, Illinois
New York • Detroit • Cleveland • Dallas • Los Angeles

BREVITY—Identify by IEN - 3593 if you write the maker

INSPECTION MIRRORS!

All-Angle Precision Made Replaceable Mirrors

- Perfect visibility all around
- Easily turned 360° ball joint
- Keep position until re-angled
- Sizes and shapes to meet all job conditions
- Replaceable mirrors
- Magnifier mirrors slightly higher

ULLMAN PRODUCTS CORP. ULLMAN BLDG B'KLYN 15, N. Y.

BREVITY—Identify by IEN - 3594 if you write the maker

250-watt WELLER Gun

Does All Types of Soldering! Heavy jobs —light jobs. The Weller Soldering Gun WD-250 does *both* with the same ease and efficiency. Saves time on every job. Cuts current costs. Your Weller Gun pays for itself in a few months.

5-SECOND HEATING. Pull trigger and you solder. No waiting. No wasted current.

RIGID-TIP. Chisel shaped and braced for heavy duty. Larger soldering area and faster heat-transfer speed work.

LONGER REACH. Gets between wiring and into the tightest spots easily.

SOLDERLITE. Prefocused spot-light lets you see what you're doing all the time.

TRIGGER-SWITCH CONTROL. No need to unplug gun between jobs. Heat goes off when you release trigger.

DUAL HEAT. Single heat 200 watts; dual heat 200/250 watts; 120 volts, 60 cycles.

SOLDERING GUIDE Get your pocket-copy of "Soldering Tips" —revised, up-to-date and fully illustrated, 20-page booklet of practical soldering suggestions. Price 10¢ at your distributor or order direct.

WELLER ELECTRIC CORP.
823 Packer Street • Easton, Pa.

BREVITY—Identify by IEN - 3595 if you write the maker

meet an important little wheel..

in big industry...

● And he can be mighty important to you. We're talking about Chicago Printed String Co's. non-woven industrial tape, PRINT-AD-STRING. He's a versatile fellow available in various widths down to ½" and in thickness down to .003", any color or combination of colors, and printed with any brand name or information you wish.

FLAT IN FORM . . .
Many Sided in Application

● **IDENTIFIES:** He identifies thousands of products at the same time that he ties and protects them.

● **OPENS:** He opens tough wrappings with ease when used as an internal rip cord, saves time, gets product acceptance.

● **ADVERTISES:** He advertises thousands of products by name, slogan, and colors, right on the product.

● **SECURES:** He secures insulation barriers between successive coils in transformer windings.

● **TIES:** He ties thousands of coils of hose and tubing securely with no rubbing, or chafing, and at the same time identifies the product.

● **PROTECTS:** He protects precision edged gaskets with his unique ability to stand high tension and stay flat, no rubbing or scuffing.

● **MEASURES:** He measures millions of miles of electric cable, and further identifies it, gives specification information, patent numbers, etc.

What can he do for YOU?

This same tape with special treatment is waterproof, fungus resistant, flame proof and heat resistant. Our Engineering Department stands ready to help you with any problem involving industrial tape, or to design a special tape to meet a special problem. Use the coupon below.

FREE!

BREVITY—Identify by IEN - 3597 if you write the maker

PACKAGING . . Counting machine feeds small parts into containers

Source: U. S. ENGINEERING CO.
138-42 Nassau St., New York 7, N. Y.

High speed product handling is combined with protective action that will not break up fragile items and provision to remove dust and small particles prior to a product reaching its intended container in this new design of the company's Count-O-Matic packaging machine, previously described IEN-73-49. The machine will handle seeds, discs, pills, buttons, capsules, small screws, nuts, washers, rivets, plugs at speeds to 350,000 per hour. It can be set for any predetermined total to 1,000 in the standard assembly and to any other total required as specified. The parts progress in a steady stream from a supply hopper to a gate that alternately switches from one row of containers to another parallel row. Control is by a Potter electronic counter. There is no interruption of the steady flow action.

A nylon brush wheel is employed in the hopper throat to space the parts evenly as they issue from the hopper and move along parallel rollers that form a trough and are open along the center to drop out dust and small particles. Cylindrical nylon brushes keep the rollers clean. A regulating wheel at the delivery end of the rollers insures uniform timing of the flow to pass the photoelectric cell that actuates the counter which, in turn, controls position of the vane and delivers to one conveyor or the other.

The line in which a container is being filled at a given instant is held against movement while the other line is advanced to position an empty container. The machine will stop if the supply of parts runs out and will hold its partial count until a new supply has been added to the hopper and flow has been resumed. Overall machine dimensions are about 79 by 24 by 83 inches. The electronic unit adds 20½ by 27 by 24½ inches. Drive for the new machine is by a ¼-hp. motor and variable-speed Graham transmission.

BREVITY—Identify by IEN - 3598 if you write the maker

SAWING . . Hacksaw blade for machine use employs three steels

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

Safe-Flex trade names new power hacksaw blade in which the cutting teeth and a portion just back of them is high-speed steel, a strip back of the high speed is medium hard steel and the balance of the blade body is a tough steel selected for ability to resist breaking in service. The three steels are welded together.

The blade is available in standard power hacksaw sizes and 4, 6 and 10-pitch teeth. Standard packaging is 10 in a box.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3599 if you write the maker

TRANSFORMERIZED MACHINES

FOR *EFFICIENT* PLANT PRODUCTION

Every motorized machine tool equipped with a transformer is its own individual power distribution station. Buildings can be wired for high voltage, and voltage reduced for power and light at the machine. This permits savings in building wiring, quick shifting of machines in a production line.

Acme Electric Air Cooled transformers are available in sizes from 1/10 KVA to 50 KVA, Class "A" insulation (55° temperature rise), and in capacities from 3 KVA to 167 KVA class "B" insulation (80° temperature rise). Primary voltages of 2400, 600, 480 or 240. Designed for high efficiency performance. Constructed for long trouble free service.

ACME ELECTRIC CORPORATION
264 WATER ST. CUBA, NEW YORK

Acme ACME Electric TRANSFORMERS

BREVITY—Identify by IEN - 3600 if you write the maker

M&M air fluff paper shredder

The Air-Fluff Paper Shredder is used for the commercial manufacture of paper excelsior. Also speedily, safely and efficiently destroys blueprints, letters and confidential records. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

mitts & merrill
1014 South Water • SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 3601 if you write the maker

MOVE MATERIALS faster with fewer workers

An excellent way to cope with the dwindling labor supply is to use conveyors to aid workers in moving materials. All man hours thus saved can then be used on productive operations. You have available a complete line of MHS Pre-engineered Conveyors for handling packages, parts between manufacturing processes, progressive assembly, inspection, order make-up and into or out of storage.

All component conveyor parts are simplified and standardized—mass produced for maximum manufacturing economy. They are capable of an unlimited number of combinations to meet any specific set of requirements. Thus you may have the advantages of a custom-built conveyor without the engineering expense or without any delay for designing.

Write for Bulletin PE 1 on MHS Pre-engineered Conveyors

Mechanical Handling *Systems, Inc.* MHS
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities

BREVITY—Identify by IEN - 3602 if you write the maker

Handy.....

when converting part of plant to war production

NEW HEIN-WERNER "PUSH and PULL" HYDRAULIC JACK

operates at *any angle* and in *any position*!

Even with ram in close quarters, the six feet of hose connecting ram with pumping unit permits free and easy operation of jack. Great for lifting, pushing, pulling, pressing, spreading and clamping jobs.

Available in 4, 10 or 20 ton capacities, with a wide range of attachments.

Hein-Werner also manufactures a complete line of Hydraulic Industrial Jacks in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity...See your industrial supply distributor, or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

BREVITY—Identify by IEN - 3603 If you write the maker

The economical, sure way— to avoid ROT and TERMITE damage!

Where steam and vapor from industrial processes are prevalent wood decay is accelerated—use Wolmanized lumber to avoid costly damage.

Wolmanized* *pressure-treated* Lumber assures *lasting* protection. High pressure (150 p.s.i.) drives the preservatives deeply into the wood. Volumetric absorption of the preservative solution is measured in gallons per cubic foot—not in feet of coated surface.

Millions of feet of Wolmanized pressure-treated Lumber have been in service under severest conditions, for years. Write for facts about Wolmanized Lumber. Or, ask for copy of "Service Records" of uses in scores of industries and applications.

American Lumber & Treating Co.
1641 McCormick Bldg., Chicago 4, Ill.

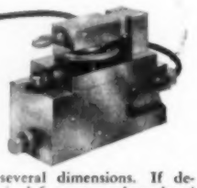
* Wolmanized is a registered trademark of American Lumber & Treating Co.

Wolmanized PRESSURE TREATED **Lumber**
Stops Rot and Termites

BREVITY—Identify by IEN - 3604 If you write the maker

SPECIAL FIXTURES

speed multiple inspection with Brown & Sharpe Electronic Equipment



HERE's how you can get faster, more accurate gaging of small parts — at low cost. Special gaging fixtures, custom-built by Brown & Sharpe, in combination with Brown & Sharpe Electronic Amplifiers, check all critical dimensions quickly, to tolerances of .00001". Applicable to gaging thickness, length, angle, parallelism, diameter, taper, or combinations of several dimensions. If desired, fixtures may be ordered for use with your present Brown & Sharpe Amplifiers. For details, write Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

We urge buying through the Distributor

BROWN & SHARPE BS

BREVITY—Identify by IEN - 3605 If you write the maker

are YOU bidding on DEFENSE ORDERS?

HANDY NEW FOLDER LISTS RUST PREVENTIVES CONFORMING TO FEDERAL SPECIFICATIONS

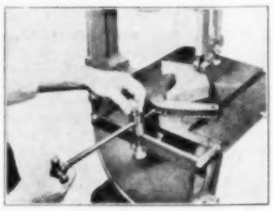
Packaging for Uncle Sam? Then you need this new NOX-RUST folder. You'll find latest details on rust preventives . . . information on what to use, how to use it . . . where to get it! Send for this free folder today. There's no obligation.

NOX-RUST CHEMICAL CORPORATION
"INDUSTRY'S RUST PREVENTION HEADQUARTERS"
2437 S. Halsted St. - Chicago 8, Illinois
BALTIMORE - SAN FRANCISCO - DETROIT - PHILADELPHIA

BREVITY—Identify by IEN - 3606 If you write the maker

SAWING . . Work feed attachment mounts on table of band saw machine

Source: DELTA POWER TOOL DIVISION
614 E. Vienna Ave., Milwaukee 1, Wis.



A star wheel mounted at the end of a screw in this new attachment is turned to move a notched feed head forward on the table of the company's 14-in. metal-cutting band saw. The screw threads through a swivel head, is mounted for lateral adjustment on a bar at the front of the table. The screw and the head can be removed to provide table clearance in handling large work. An instruction sheet is supplied to show how to cut rectangular pieces, curves and irregular shapes.

BREVITY—Identify by IEN - 3607 If you write the maker

VENTILATING . . Power exhauster discharges bad air, fumes, through roof

Source: ROBBINS & MYERS INC.
1343-47 Lagonda Ave., Springfield 99, Ohio

Detail data in Bulletin 680

Cylindrical shell mounted on a curb-type rectangular base includes an outer wind guard and an inner throat with annular space between in this new exhauster. The wind guard is supported so its bottom edge is above the base for induced air inlet. The throat supports a hinged damper and at its bottom is a motor-driven fan of the company's Airfoil Propeller design. Assembly can be made on a horizontal or slanted roof by building up beneath the curb.

Eight sizes mount 16 to 60-in. fans with motor ratings at ¼ to 15 hp. and speed at 1,725 to 1,150 rpm. A slow-speed 60-in. unit operates at 690 rpm. with capacity range of 2,820 to 78,800 cfm. of air delivery.

BREVITY—Identify by IEN - 3608 If you write the maker

MIXING . . Collapsible stirrer made to enter through a flask neck

Source: FISHER SCIENTIFIC CO.
715-19 Forbes St., Pittsburgh 19, Pa.

Collapsible head is assembled on a 12-in. shaft to make up this new patented Umbrella assembly for laboratory use. The shaft fits in a ¼-in. chuck on a standard motor-driven head. It collapses to enter through a flask neck, expands again when it is in operating position in the flask. Parts are made of corrosion-resistant stainless steel. The blade can be twisted to produce a range of shearing action.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3609 If you write the maker

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special formulas of treatment for:
Boiler feed water . . . hot water supply . . . refrigerating brine . . . cooling and condenser water . . . rapid scale removal . . . coagulation . . . algae control . . . fuel oil supply . . . soot removal.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2053024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

BREVITY—Identify by IEN - 3610 If you write the maker

From Air Conditioning To Atomic Research

THESE SMALL SWITCHES ARE DOING A BIG JOB

Series 240 Rotary Switches

. . . now available in over 30 circuit variations for heater, motor and low-voltage A.C. electronic applications

Brand new only a few months ago, today in dozens of products, both civilian and defense, Series 240 Switches are proving the value of their exclusive combination of features:

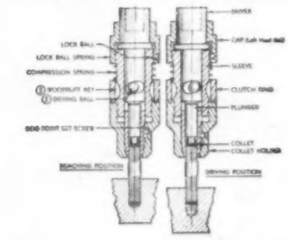
- *Compactness* — unmatched by any comparable switch: base only 1½" high, 1¼" wide, 1" deep. Available in single hole mounting and bezel equipped models. Latter snaps into mounting hole for fast assembly with spring clips holding it firm.
- *Heat Resistance* — completely efficient operation with ambient temperatures up to 400° F.
- *Entirely Enclosed* — for safety, and protection of working parts.
- *High Overload Capacity* — ratings are conservative: 7½ A. 240 V; 15 A. 120 V; 25 A. 120-240 V; 1H.P., 120 V; 2 H.P., 240 V. A.C. only. Underwriters' Laboratories Approved.
- *Peak Performance and Long Service Life* — thanks to ingeniously simple design, rugged construction, heavy silver contacts and long recognized "Diamond H" slow-break principle.

Write today for complete details on how Series 240 Switches will meet your needs.

THE HART MANUFACTURING COMPANY
203 BARTHOLOMEW AVENUE, HARTFORD, CONNECTICUT

BREVITY—Identify by IEN - 3611 If you write the maker

TITAN AIR SERIES Stud Driver and Remover



Engineered for the Aircraft Industry

Mutilation, scraping of stud threads — and distortion of cotter key holes — are eliminated by the new TITAN high speed, collet type, stud driver!

Unique in design, practical is use, the stud is driven by PITCH DIAMETER PRESSURE instead of pressure on top of the stud. Saves studs, saves time, speeds your work!

Write for Literature and Prices, TODAY!

TITAN TOOL CO.
Production Tools
46 Main St., FAIRVIEW, PA.

BREVITY—Identify by IEN - 3612 If you write the maker

New Improved E-Z Set BORING TOOL

Developed for close-tolerance operations

Today's demand for accurate, high-speed production of vital parts can be met with the new MAXWELL E-Z Set Boring Tool.

Micrometer barrel-type adjustment assures rapid, simplified set-up in jig-bore, milling machine, boring mill, automatic, etc. Featuring adjustable offset to 0.0001-inch, the new MAXWELL E-Z Set Boring Tool is available in three models with maximum boring bar capacities of ½, 1 and 1½ inches, respectively. This set covers a boring range from ⅜ to 20 inches. Illustration shows three cutter positions employed to obtain this wide range.

Write today for catalog No. 30.

THE MAXWELL COMPANY
891 BROADWAY • BEDFORD, OHIO

BREVITY—Identify by IEN - 3613 If you write the maker

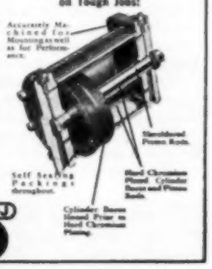
Simplify Machines... Save Labor with

T-J CYLINDERS

For PUSH...PULL...LIFT Jobs

Consult with T-J about your problems in power movement—pushing, pulling or lifting ... 100 lb. or 50,000 lb. These are jobs for T-J Air and Hydraulic Cylinders to simplify your machines and equipment, save labor and cut costs! Many standard sizes and styles ... both cushioned and non-cushioned types ... precision-built for long life ... dependable. Write for additional information. The Tomkins-Johnson Co., Jackson, Mich.

T-J Built to "TAKE IT" on Tough Jobs!



33 Years Experience

TOMKINS-JOHNSON

BREVITY—Identify by IEN - 3614 If you write the maker

PORTER-CABLE

Abrasive-Belt Grinders are ready to Step Up Production on Many Urgent Contracts!

Early Delivery

Machines Flats
Grinds Contours
Does Centerless Grinding
Generates Radii
Chamfers and Bevels
Burrs, Polishes
Smooths Parting Lines

TYPE BG-8 — Usable Wet or Dry. Newest development in Porter-Cable line. May be used with micrometer-oscillating or hydraulic feed tables. Works to precision tolerances. Fast cutting, fine finishing. Cuts costs and speeds work in production line, tool room, job shop. (Model BG-8/FT9 Illus.)

Case after case shows greatly reduced surfacing time. Jigs and fixtures invariably are simpler, less costly, often eliminated completely. Set-up time is reduced drastically. Entire surfaces—even interrupted—are done in one presentation to the belt; no time wasted "cutting air". Stock removal and final finish in same operation—giving a straight grain surface without tool marks. Depending on the job, abrasive belts run wet or dry. Where required, grit surface is cooled and flushed clean by coolants, to prevent warping, discoloration, flaws, and to preserve cutting efficiency.

Free! These days call for production, production, more production! We'll gladly advise how Abrasive Belt Machining can be applied to your own work. Get all the facts! Send for booklet "Abrasive Belt Finishing."

Complete Line:

- Platen Grinders
- Contour Grinders
- Contact Grinders
- Centerless Grinders
- Free-Belt Grinders
- Bench Grinders

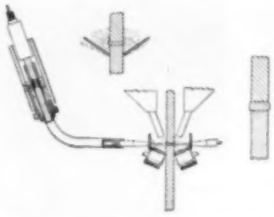
PORTER-CABLE MACHINE CO.
6004 N. Salina St., Syracuse 8, N. Y.
Gentlemen: Please send free booklet, "Abrasive Belt Finishing."
Name
Address
City State

PORTER-CABLE
Manufacturers of SPEEDMATIC and GUILD Electric Tools
In Canada write: Strangridge Ltd., St. Catharines, Ont.

BREVITY—Identify by IEN - 3616 If you write the maker

WELDING . . Hidden arc equipment applies opposed horizontal electrode heads

Source: LINCOLN ELECTRIC CO.
13020 Coit Road, Cleveland 8, Ohio



A horizontal arc weld is made by working simultaneously from opposite sides of the weld seam with the work standing vertically, or at an angle, by a new patented design which the company has added to its line of hidden-arc welding equipment. Applications include fabricating pipe, box sections, special structural sections, joining clips to automobile bumpers, erecting large outdoor storage tanks in the field.

Two short belt conveyors apply in head assemblies on the two sides of the work and are set at an angle with the work to form a trough into which spouts deliver the arc-protecting flux. Electrode heads mounted above the belt in horizontal position, face the work on the two sides so the electrode wires can feed through them from automatic machines conveniently positioned. The complete assembly, including the conveyors, the electrode heads and the spouts, moves forward along the weld. The conveyor belts are driven so their upper surfaces, carrying the flux, remain stationary in relation to work. Thus the flux can flow down and surround the electrodes correctly while excess flux drops off the conveyor end at some distance back from the actual welding point. The company is prepared to consult with prospective users and to recommend, design and supply the equipment.

BREVITY—Identify by IEN - 3617 If you write the maker

TESTING . . Electromagnet for research, high flux density

Source: ARTHUR D. LITTLE INC.
28-32 Memorial Drive, Cambridge 42, Mass.

Pot type design for a short magnetic path, interchangeable pole pieces and fluid cooling characterize the design of this new type ADL Electromagnet. It is table mounted and its two main parts are assembled so one can be slid on the table top to separate the pole pieces and then can be brought back into operating position. Weight is about 4,000 pounds. Field strength is 30,000 gauss based on a pole face diameter of 1 in. and an air gap of 1 inch. Power rating in this assembly is 20 kw. Overall dimensions are about 5 by 3 by 5 feet.

Typical applications include study of the magnetic perceptibility of paramagnetic and diamagnetic salts, magnetic properties of colloids and suspensions, determination of ferromagnetic impurities and of carbon content in steels, paramagnetic separation at low temperatures, studies of living organisms in magnetic fields.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 3618 If you write the maker

You know how to operate this extinguisher JUST BY LOOKING AT IT!

It's a Randolph!

Anybody can get a Randolph into action FAST! No valves to turn, no nozzles to adjust; just point and press your thumb! Randolph's snowy CO_2 is non-damaging, evaporates without a trace. It's non-toxic, won't conduct electricity, deteriorate or freeze. Underwriters' approved.

A Complete Line of Extinguishers and Systems

Learn how Randolph gives your plant better *preventive* fire protection! Write for full facts.

RANDOLPH LABORATORIES, INC. 8 S. KINZIE STREET CHICAGO 11, ILLINOIS

BREVITY—Identify by IEN - 3619 If you write the maker

Northern HI-LIFT CRANES

MOVE BIGGER, HEAVIER LOADS QUICKER

Your material handling costs can be cut dependably by moving bigger, heavier loads quicker—by reducing the number of material handling movements. NORTHERN HI-LIFT CRANES and HI-LIFT HEAVY DUTY HOISTS can do it for you.

Let us send you our NEW BULLETIN HL-115

NORTHERN ENGINEERING WORKS
2615 Atwater St., Detroit 7, Michigan

Northern HI-LIFT HOISTS

BREVITY—Identify by IEN - 3620 If you write the maker

Speeds sanding of metal surfaces preparatory to priming and final finish

Speed the removal of burrs, grinder marks, and other defects in metal surfaces before priming . . . then sand primer coat to a smooth, level surface before final finish. Sundstrand Air Sanders with *Straight-Line Action* are available in single or double pad models, for wet or dry sanding on flat or curved surfaces, to handle almost any sanding operation on wood, metal, or plastics. See your local distributor or write us today for Bulletin IE-4.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 3621 If you write the maker

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
122	225	325	500	900	1300	1700
130	230	330	550	950	1350	1750
150	250	350	600	1000	1400	1800
162	262	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

$2 each

gives up to 2000 readings

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME
COMPANY
ADDRESS

BREVITY—Identify by IEN - 3622 If you write the maker

with a little GOLD SEAL TAPE

No use talking — Gold Seal sticks to the job. And being a *quality* tape, it goes further! You get more tape value because there's no waste. Try Gold Seal Tape next time you want a tighter, longer-lasting bond. In single rolls and handy 10-roll containers. Jenkins Bros. (Rubber Division), 100 Park Ave., New York 17.

JENKINS Gold Seal Tapes FRICTION . . . RUBBER

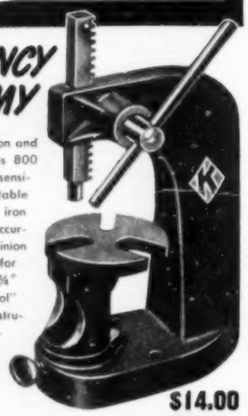
MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

BREVITY—Identify by IEN - 3623 If you write the maker

THE HP-600

ARBOR PRESS

For EFFICIENCY and ECONOMY



For light high-speed production and assembly presswork. Provides 800 lbs. of sensitive pressure and sensitive control. Frame, table and table standard are close grained iron castings, well braced and accurately machined. Rum and pinion are special steel. Three slots for arbor work—¼", ½" and ¾" wide. The ideal "Pressure Tool" for model makers, jewelers, instrument makers, radio men, research laboratories, schools, light production work, etc.

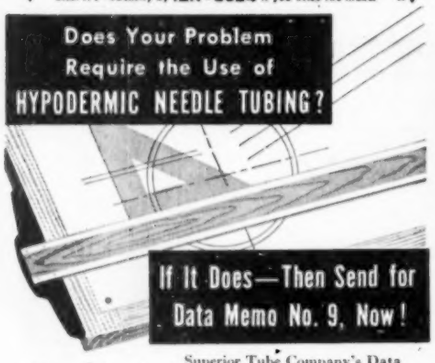
Straightening attachment available at $4.95.

$14.00 POSTPAID U.S.A.

Write for further information.

H. D. HERDER TOOL SPECIALTIES
2724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 3624 If you write the maker



Superior Tube Company's Data Memorandum No. 9 contains the basic information you'll need to order Hypodermic Needle Tubing. Today, because of conditions beyond our control, we may not be able to fill all of your needs for small diameter stainless steel tubing (.014" O.D. to .203" O.D.) but it will pay you to check with us. We may be able to supply your needs out of stock. Write today for Data Memo No. 9.

Superior
THE BIG NAME IN SMALL TUBING

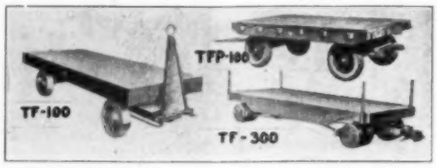
All analyses—.010" to ⅛" O.D.
Certain analyses (.035" max. wall) up to 1⅜" O.D.

SUPERIOR TUBE COMPANY, 2016 GERMANTOWN AVE., NORRISTOWN, PA.

BREVITY—Identify by IEN - 3625 If you write the maker

TRUCK . . Platform trailers, 5 to 15 ton, 24 to 40 in. height

Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Pittsburgh 3, Pa.



Steel bodies on axle assemblies that can be set solid or in pivoted arrangement, pneumatic-tired or solid-rubber wheels, make up a new line of industrial trailers for use singly or in trains. When both axles are set to swivel and are tied together by cross-bars, a number of the trucks can be coupled to operate in tracking line, one behind the other.

Model TFP measures about 40 in. from the floor to platform top. It is 85 in. in width and about 130 in. in length. The wheels are equipped with 16-in. pneumatic tires. Model TF-100 rates 5 ton. Its platform stands 22¼ in. above the floor. Overall dimensions are 42 by 96 inches. Model TF-300 stands 23½ in. above the floor, has a 50 by 100-in. platform top. The wheels on the latter two trucks are equipped with solid rubber tires. All of the three mountings ride on Timken roller bearings. The trucks are welded-steel construction and are equipped with suitable stake pockets.

BREVITY—Identify by IEN - 3626 If you write the maker

BEARINGS . . Molded bushing, graphite impregnated, specified sizes

Source: GRAFLUBE BEARINGS CO.
1414-18 E. Burnett St., Signal Hill, Calif.

Is machined to finish sizes

Sleeve bearing characterized by its self-lubricating ability is now available for general industrial use following about 10 years of service experience in the petroleum field where the material has been employed mostly in block form in pumping equipment.

The molded sleeve, or bushing, has compressive strength between 8,000 and 11,000 lb. per sq. in. depending upon the plane in which it is molded. Hardness is between 20 and 40 on the Shore Scleroscope as compared to 25 for brass in the same test. The bearing can be employed in a temperature range between minus 50 and plus 450 deg. F. in continuous duty. It is not subject to attack by fresh or salt water, most hydrocarbons, weak acids and alkalis.

Recommended practice calls for a bearing pressure of not more than 600 lb. per square inch. Wall thickness is recommended at 3/16 in. for outside diameters to 1½ in. or 1¼ in. above 1½ inches. Installation is by keying or cementing in place to prevent rotation. Press fits are not recommended. Shaft clearance is best at .001 in. per inch of diameter above 2 in. with minimum clearance at .005 inch. Following a short period of operation, both the bearing surface and the shaft assume a black sheen which tests to be hard graphite.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All products are listed in the index, page 114

BREVITY—Identify by IEN - 3627 If you write the maker

NP PRE-ENGINEERED Pneumatic DOOR OPERATORS

NATIONAL PNEUMATIC CO., INC.
Boston • Graybar Bldg., New York • Chicago

BREVITY—Identify by IEN - 3628 If you write the maker

ACCURATE INFORMATION IS VITAL WHEN YOU DEAL WITH TEMPERATURE and RELATIVE HUMIDITY!

. . . Rely On **Bendix-Friez**

With the Bendix-Friez portable humidity and temperature recorder, 10 or 30 hour records may be kept on convenient 3" x 5" charts. Compact design and superior precision make this handy instrument ideal for taking on-the-spot recordings covering any productive process or plant condition. For more detailed information write to:

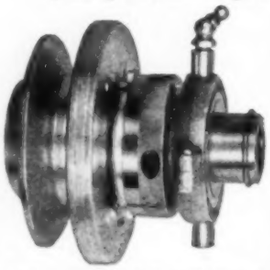
Model 160
Portable Humidity and Temperature Recorder

FRIEZ INSTRUMENT DIVISION of
1344 Taylor Avenue · Baltimore 4, Maryland
Export Sales: Bendix International Division, 72 Fifth Ave., N. Y. 11, N. Y.

BREVITY—Identify by IEN - 3629 If you write the maker

NEW DISC CLUTCH

for gasoline engines, electric motors, speed reducers, etc.
operates with light pressure
picks up load without grab



integral V-belt pulley
integral sprocket
cut-off coupling or sleeve
easy manual operation
adjustable
powerful

For stub or through shaft application, these new Type K clutches—rated up to .8 H.P. at 100 r.p.m.—have generous safety factors throughout to stand severest service. Threaded steel adjuster permits precise easy adjustments to assure maximum capacity and minimum engaging pressure. Clutch locks itself in engaged position.

Write for new descriptive Bulletin K-1, including complete specifications.

THE EDGEMONT MACHINE CO.
2200 HOME AVENUE • DAYTON 1, OHIO

BREVITY—Identify by IEN - 3630 If you write the maker

WORKS LIKE DYNAMITE!

but a safe cleaner for aluminum

The Original Junk HYDRO-SEAL

world's most powerful solvent for cleaning carbonaceous tars, carbon, paint from pneumatic tools, internal combustion engine parts, diesel injector nozzle, oil burner nozzles, etc.

a Di-Phase solvent
27 times faster than lye

self-emulsifying and self-scouring

extreme solvency — terrific penetration

free of causticity and toxicity —safe to handle

brightens aluminum without etching, loss of weight or dimension

available in 5—55 gal. size ready to use Kits

send for technical data sheet

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE, MASS.
122 South Canal Street

BREVITY—Identify by IEN - 3631 if you write the maker

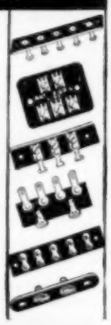
Send your specifications for prompt quotation

Hundreds of standard JONES TERMINAL PANELS

Complete Equipment FOR SPECIALS

Several pages of Jones Catalog No. 17 illustrate standard and special panels we are constantly producing. Latest special equipment enables us promptly to produce practically any panel required. Send print or description for prices, without obligation. Hundreds of standard terminal strips also listed. Send for Catalog, with engineering drawings and data.

JONES MEANS Proven QUALITY

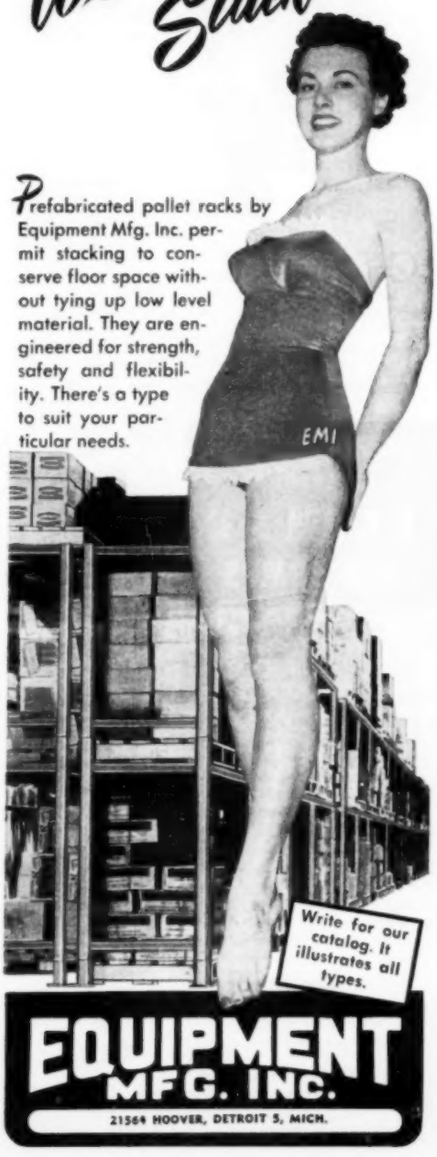


Send for complete data on this new basic improvement!

Jones — HOWARD B. JONES DIVISION

BREVITY—Identify by IEN - 3632 if you write the maker

Well Stacked!



Prefabricated pallet racks by Equipment Mfg. Inc. permit stacking to conserve floor space without tying up low level material. They are engineered for strength, safety and flexibility. There's a type to suit your particular needs.

Write for our catalog. It illustrates all types.

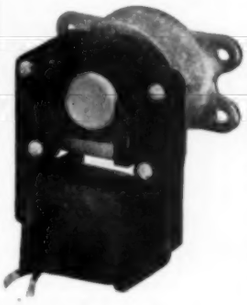
EQUIPMENT MFG. INC.

21564 HOOVER, DETROIT 5, MICH.

BREVITY—Identify by IEN - 3634 if you write the maker

MOTOR . . Self-starting synchronous particularly for instrument and timing

Source: ELECTYME MOTOR PRODUCTS CORP. 563-67 W. Washington Blvd., Dept. IE, Chicago 6, Ill.



New type rotor in an enclosed one-piece housing characterizes the construction of the company's recently-improved self-starting Series-300 synchronous motor. It is available in 1, 4, 15 and 60-rpm. speeds in standard designs and can be specified for 2, 6, 10, 12, 30 and 40 rpm. if sufficient quantity is involved to warrant their manufacture. External movement can be added for one revolution in 10, 15, 30, 60, 720 and 1,440 minutes.

The assembly for output speed of 1 rpm. has 40 in. oz. starting torque and 30 in. oz. synchronous torque. The 60-rpm. assembly rates .67 in. oz. and .5 in. ounce. Overall dimensions measured on the housing are $2\frac{1}{16}$ by $1\frac{7}{8}$ by 3 inches. Operation is on 110-volt 60-cycle ac.

BREVITY—Identify by IEN - 3635 if you write the maker

CORROSION PROOFING . . Plastic applied to tubing on contract basis

Source: SAMUEL MOORE & CO. 51 Moore St., Mantua, Ohio

Work is handled in Ohio plant

New service has been set up by the company through which it is prepared to apply its Dekoron plastic armoring to tubes made of aluminum, copper, steel to protect the exterior against corroding attack. The company can handle tubes in straight lengths or in 50-ft. coils in sizes ranging from about ⅛ to 3 in. o.d. Coating thickness starts at .015 inch.

BREVITY—Identify by IEN - 3636 if you write the maker

STAPLING . . Miniature tool drives staples to install tubes, wiring

Source: HELLER CO. 2147-H Superior Ave., Cleveland 14, Ohio

The guides at the front and rear of this new stapling tool circle a wire or a small tube and permit drawing the tool along in order to drive staples at desired positions. The tool is supplied with a staple of special design that is made in several colors and provided with driving points to penetrate plaster, composition board, hard or soft wood. The staple is driven without marring or injuring the wire.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3637 if you write the maker

SPEEDY AIR VISE

SPEEDS UP ✓ MILLING ✓ PUNCHING ✓ DRILLING ✓ BENDING ✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 5730 Armitage Ave. • Chicago 39, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

BREVITY—Identify by IEN - 3638 if you write the maker

DON'T BE A SLAVE TO LIGHT SWITCHES

You don't have to turn the sun on and off. Why not forget about your own electric lights, too, by installing G-E Time Switches?

YOU'LL SAVE on the time and trouble of switching your lights manually.

YOU'LL CUT POWER COSTS that mount up when you leave your lights on overtime.

TIME SWITCHES

General Electric time switches are ideal for process timing, plant lighting, pump and blower control, floodlighting, and many other uses. Check these two popular models:

The T-27 Time Switch: up to 12 operations per day . . . astronomic dial available.

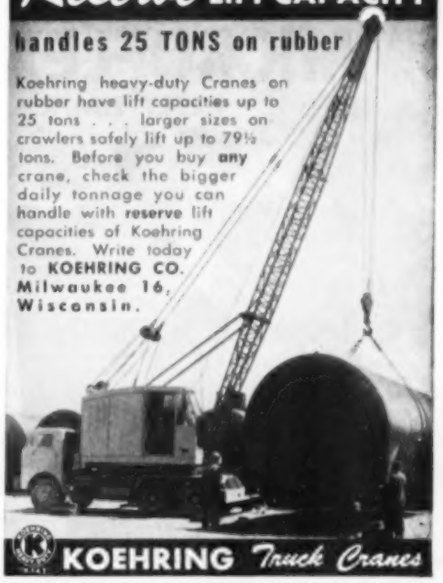
The T-47 Time Switch: from 5 minutes to 22 hours between ON and OFF operations.

Ask your G-E representative to show you the way to greater savings with time switches. *Apparatus Dept., General Electric Co., Schenectady 5, New York.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 3639 if you write the maker

Reserve LIFT CAPACITY handles 25 TONS on rubber



Koehring heavy-duty Cranes on rubber have lift capacities up to 25 tons . . . larger sizes on crawlers safely lift up to 79½ tons. Before you buy **any** crane, check the bigger daily tonnage you can handle with **reserve** lift capacities of Koehring Cranes. Write today to **KOEHRING CO. Milwaukee 16, Wisconsin.**

KOEHRING *Truck Cranes*

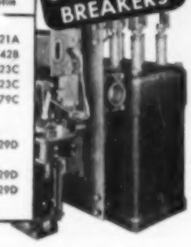
BREVITY—Identify by IEN - 3640 if you write the maker

FULL ELECTRICAL PROTECTION for Industrial Electrical Service

in these ratings

Type	Volts	Amps	Kva Int. Cap.	Send for Bulletin
E-145	2,500	400	15,000	71B6021A
E- 47	4,160	600	25,000	71B6342B
D- 20	4,160	1200	50,000	71B6023C
D- 20	7,200	600	50,000	71B6023C
DZ- 40	7,200	600 1200 2000	100,000	71B6179C
DZ- 60	13,800	600 1200	150,000	71B6129D
DZ-100	13,800	1200	250,000	71B6129D
DZ-200	13,800	1200 2000	500,000	71B6129D

ALLIS-CHALMERS OIL CIRCUIT BREAKERS



ASK YOUR ELECTRIC POWER UTILITY about Allis-Chalmers circuit breakers. Get proof of their reliability, economy and adaptability to many operating conditions. Breakers have simple mechanism and contact design . . . a variety of accessories for automatic and manual tripping and closing.

Over 50 years of power circuit breakers (air or oil). Ratings 2500 to 230,000 volts and 15,000 to 10,000,000 kva interrupting capacity for industry and power utilities. For complete information on the breaker to fit your requirements write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3364

ALLIS-CHALMERS

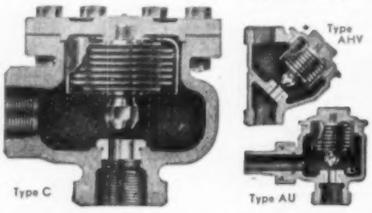
BREVITY—Identify by IEN - 3641 If you write the maker

In This Plant Nicholson Traps

SAVED 10% IN STEAM COSTS

Chief Engineer H. F. D. stated, after Nicholsons replaced mechanical traps in his plant: "Saving in steam waste cut our fuel cost at least 10%. Yet application temperatures were up 30°-40°. And relief of all air-binding effected faster warm-up." 5 types for process, heat, power. Sizes, ¼" to 2"; presssure to 225 lbs. To see why leading plants are increasingly standardizing on Nicholson traps send for . . .

BULLETIN 450



W. H. NICHOLSON & CO. 169 OREGON STREET WILKES-BARRE, PA.

Sales and Engineering Offices In 53 Principal Cities

BREVITY—Identify by IEN - 3642 If you write the maker

TIMING CIRCUITS SIMPLIFIED!

Beyond the shadow of a doubt!

EAGLE

MICROFLEX RESET TIMER

You can work wonders with the Microflex Timer and its more than 100 possible operating combinations. There is no need for additional relays. Investigate the timer that does the complete job!

WHEN ACCURACY COUNTS!

Write for BULLETIN 110

EAGLE SIGNAL CORPORATION

Moline, Illinois

BREVITY—Identify by IEN - 3643 If you write the maker

BRONZE?

COPPER?

Aluminum?

brass?

stainless?

MONEL?

which alloy for your fastenings?

Harper knows because Harper specializes in them *All* . . . and whether your problem is corrosion, abrasion, heat, stress, appearance or a combination of these, Harper has met it before through many years of service to all industries. Over 7,000 items . . . bolts, screws, nuts, rivets and accessories . . . in stock ready for delivery from warehouses and distributors coast to coast. Mail coupon for details and free copy of Corrosion Resistance Computer.

HARPER

EVERLASTING FASTENINGS

The H. M. Harper Co.
8° Lehigh Ave., Morton Grove, Ill.
Rush my copy of free Corrosion Resistance Computer.

Name.....

Address.....

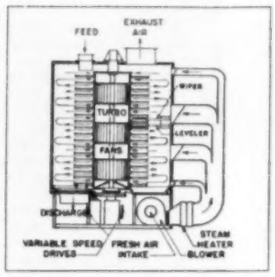
City..... State.....

Specialists in ALL non-corrosive metals

BREVITY—Identify by IEN - 3644 If you write the maker

DRYING . . Rotating tray machine takes liquid out of process materials

Source: WYSSMONT CO.
31-04-V Northern Blvd., Long Island City 1, N. Y.



New design of the company's Turbo process dryer is for use on heat-sensitive materials having a tendency to foul internally-positioned heaters. The new unit employs external heating elements and centrally-mounted centrifugal blowers so the air is heated, drawn in and passed through the dryer once only. Materials to be dried are fed through an opening in the top and are spread on the top revolving shelf as it moves under the feed opening.

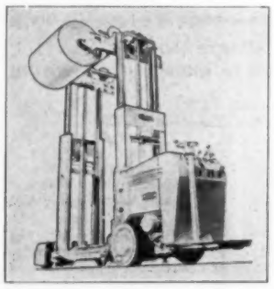
The material so spread is plowed off the tray to fall upon the shelf below it either into a pile to be leveled off as it reaches a stationary leveler or into a hopper from which the material is spread out in a layer. This action is repeated from each shelf down to the next in a gentle transfer action that assures minimum breakage or production of fines.

Smallest unit in the line measures 6 ft. in diameter by 6 ft. in height and will handle 40 to 70 lb. of material per hour, based on an initial moisture of 30 per cent and final moisture of 5 per cent. The company has built larger units measuring about 35 ft. in diameter by 60 ft. in height, able to evaporate 25,000 lb. of water per hour. Typical materials that can be processed include starch, onion powder, deoxidizing agents, pharmaceuticals, salts, silica gel, carnauba wax.

BREVITY—Identify by IEN - 3645 If you write the maker

TRUCK . . Special power lift unit handles rolls in dark storage room

Source: LEWIS-SHEPARD PRODUCTS INC.
256 Walnut St., Watertown 72, Mass.



Light sensitive rolls, weighing 1,500 lb. and measuring 32 in. in diameter by 42 in. in length, are handled in and out of five-high storage racks in a room that is completely dark by this new truck. It is a special assembly for manual steering to and from the various aisles in the storage room. It rides on tracks where it is held in line by guide rollers to move through the aisles and to position for depositing or removing a roll.

A signal installation in the truck tells the operator when he is in correct position. Hydraulic power is employed to raise and lower the roll-handling cradle, to move it sidewise and back in relation to the storage rack.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3646 If you write the maker

REDUCE YOUR FASTENING COSTS with

SEMS by SHAKEPROOF

WRITE FOR *Free* TEST KIT

To make every screw fastening operation faster, easier and more dependable specify SEMS-by-SHAKEPROOF. Specially designed Shakeproof Lock Washers are *pre-assembled* to machine screws to provide easy-to-handle units. You obtain greater locking power, greater tooth engagement and eliminate the possibility of washer canting as *extra* advantages.

ask for Kit No. 23 → test, try, and prove their merits. Write today!

SHAKEPROOF inc.

fastening Headquarters

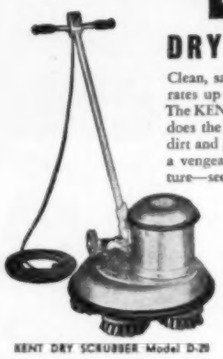
DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois
In Canada: Canada Illinois Tools, Ltd., Toronto, Ontario

BREVITY—Identify by IEN - 3647 If you write the maker

CLEAN FLOORS are SAFE FLOORS

KENT

DRY SCRUBBER



Clean, safe floors keep production rates up and accident rates down! The KENT D-20 DRY SCRUBBER does the job — tackles impacted dirt and grease accumulations with a vengeance! Send for free literature—see what KENT can do!

KENT Brushes are self-sharpening

Five individual brushes rotate as a unit . . . and maintain top cutting efficiency as they work.

KENT DRY SCRUBBER Model D-20

Manufacturers of KENT Floor Machines, KENT Commercial Vacuum Cleaners, KENT Flux Recovery Units, KENT Furnace Cleaners

CLEAN WITH KENT EQUIPMENT

THE KENT CO. INC., 437 CANAL ST., ROME, N. Y.

BREVITY—Identify by IEN - 3648 If you write the maker

Design with AIR!

Pressure • Vacuum • Suction

Handle all these jobs!

Lifting—holding—chucking—sorting—cleaning—drying—cooling—separating—mixing—agitating—feeding—blowing—leak-testing—pressure-boosting, etc.

COUNTLESS jobs are done faster, simpler, less expensively by using pressure, vacuum or suction provided by Leiman Air Pumps. Air is the only reliable, trouble-free solution to many operations. Learn more about the great possibilities of designing with air. Leiman engineers offer over 60 years' experience with thousands of air applications. Outline your application for recommendation and suggestions. Write for data outlined below.

Your most efficient air source—

LEIMAN AIR PUMPS

Take up their own wear!

IF an air pump can do it—a Leiman Air Pump will do it best! Simple, compact design provides greater capacity, size for size . . . has fewer moving parts . . . provides a continuous flow of air . . . is extremely quiet in operation . . . uses no gaskets or packing . . . maintains leakless fitting for life . . . requires no storage tanks . . . needs little or no maintenance . . . Range of sizes for pressure up to 25 lbs. p.s.i. or vacuum up to 29". Specify Leiman Air Pumps on equipment you buy—install them in equipment you build. Get engineering data.

Exclusive Leiman hinged wing design permits wings to wear uniformly, maintaining full pressure or vacuum, after 15 and 20 years' steady service.

WRITE FOR ENGINEERING DATA

•**16-PAGE CATALOG** showing construction, types, sizes, capacities, etc.

•**APPLICATION FOLDER.** Contains 60 "how-to-do-it" blueprints of actual applications. Will suggest many more.

LEIMAN BROS., Inc.
166 Christie St., Newark 5, N. J.

AIR PUMPS • AIR MOTORS • SAND BLASTS • DUST COLLECTORS

BREVITY—Identify by IEN - 3650 if you write the maker

For Better Products . . .

For Better Production . . .

Titeflex

ALL-METAL Flexible Tubing

As a component part of your equipment . . . or at work in your own plant . . . Titeflex can give you a new high efficiency. Titeflex is *all-metal*. It has the inherent strength of metal *plus* permanent flexibility. Here are the facts:

★ Sizes and types for temperatures from minus 300°F. to 1650°F. and several thousand pounds pressure.

★ Made in brass, bronze, stainless, Monel and Inconel to solve most problems of corrosion and abrasion.

Regardless of your use for flexible tubing you'll find it will pay to specify Titeflex.

Write for complete literature

TITEFLEX, INC.
500 Frelinghuysen Ave., Newark 5, New Jersey

TITEFLEX STAYS TIGHT WHEN THE GOING IS TOUGH

BREVITY—Identify by IEN - 3651 if you write the maker

PERMACEL
News Graphic
SPEEDING PRODUCTION WITH INDUSTRIAL TAPES

PHILCO FINDS NEW STAIN-RESISTANT TAPES speed production, protect white and near-white surfaces from residue. **PERMACEL-71** holds metal letters in proper alignment until they are permanently affixed.

SPEEDIER, LESS EXPENSIVE "BUNDLING" **PERMACEL** Cloth Tape speeds assembling jobs for R.O.W. Distributors, of Rocky Mount, Va. Tape is easily applied; sticks tightly, is easily removed.

FREE! HELPFUL BOOK— Send for helpful new booklet—"A New Tool for Industry"—12 fact-filled pages showing how tape can help your business. Write Dept. GA.

INDUSTRIAL TAPE CORP. NEW BRUNSWICK, N. J.

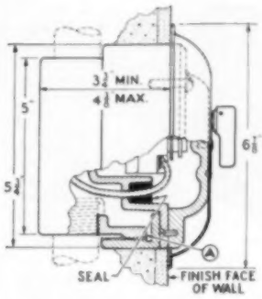
NAME ..... (PLEASE PRINT)
TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... STATE ..... GA

Permacel
INDUSTRIAL TAPES
INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J.
makers of ®TEXCEL Cellophane Tape, and a complete line of pressure-sensitive tapes for industry.

BREVITY—Identify by IEN - 3653 if you write the maker

SWITCH . . Sealed tumbler design for mounting flush in a wall surface

Source: RUSSELL & STOLL CO.
125 Barclay St., 11th Floor, New York 7, N. Y.



Installation of this new heavy-duty switch is in a wall opening 5¾ in. in diameter. Overall diameter of the chromium-plated or baked-enamel cover is 6⅞ inches. The switch meets Underwriter's requirements for Class I, Groups C and D. It is available in 1 and 2-pole, 3 and 4-way assemblies. Minimum depth of wall is 3¾ in. from the finished surface. Rating is 20 amp. in all but 4-way construction, which rates 10 amp. on 110-volt ac. List price with the chromium-plated cover is $26 to $38. Each is sealed.

BREVITY—Identify by IEN - 3654 if you write the maker

PLASTIC . . Laminated material to make gears, cams, machine parts

Source: RICHARDSON CO.
2790-94 Lake St., Melrose Park, Ill.

Colors are both natural and black

Grade T-815 is a new material in the company's line of laminated Insurok plastics. It is a cotton-fiber mat-base phenolic laminate with uniform mechanical strength in all directions. It is designed primarily for mechanical and electrical parts requiring good physical strength. It can be machined in about the same manner as hard brass. Parts can be cold punched in sheets to 1/16-in. thickness or hot punched in sheets to 5/32 inch. Sizes are 36 in. in width and 36 to 72 in. in length with thickness starting at 1/16 in. and extending upward to specification. Gears, cams, bobbin heads are typical uses.

BREVITY—Identify by IEN - 3655 if you write the maker

CLEANING . . Woven sponge pad for washing and wiping is lint free

Source: TOWER INDUSTRIES INC.
733-37 Carnegie Ave., Dept. 1, Cleveland 15, Ohio

DuPont cellulose sponge yarn is woven to the form of a pad which now is available in four sizes ranging from 7 by 8 in. to 15 by 30 in. and listing at 70 cents to $3.00. Woven Wonder is the trade name. The yarn is highly absorbent. It also has the qualities of a good chamois. It leaves no lint, will not sour, is non-compatible with oils and greases, tends to repel rather than to absorb them.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3656 if you write the maker

For Faster Assemblies
use a
"YANKEE"
Quick-Return Spiral
Screw Driver

A push on the handle and the screw is off to a spinning start! Up with the arm and the driver is ready for the next push. Constant spring pressure keeps the bit in the screw slot. This quick-return feature of the "Yankee" Spiral Screw Driver helps one hand do the work of two, easier and faster.

Quick-Return Style
Nos. 130A, 131A, 135
Standard Style
(without Quick Return Spring).
Nos. 30A, 31A, 35

Ask your Industrial Supply Distributor about these and other "Yankee" Tools that put an extra push into every job.

Write today for the "Yankee" Tool Book

"YANKEE" TOOLS NOW PART OF STANLEY THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

BREVITY—Identify by IEN - 3657 if you write the maker

Today's Best Buy is Better Air!

Type N Roto-Clone serving stand grinder

SAFER magnesium finishing!

The Type N Roto-Clone dynamic precipitator has an unequalled safety record in efficient collection and safe storage of dangerous dust. This shows one of three Type N Roto-Clone installations exhausting double-wheel stand grinders used for finishing magnesium castings.

If incendiary dust is your problem—write us.

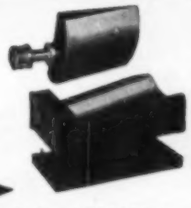
AAF American Air Filter
COMPANY, INC.
335 Central Ave., Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

BREVITY—Identify by IEN - 3658 if you write the maker

NEW *Empco JACK* Gives you Quick Accurate Machine Leveling and it ABSORBS *VIBRATION*

New type JACK greatly reduces noise and vibration with VI-SORB Mounting Pads.

VI-SORB Mounting Pads



The combination of a new Empco Jack and VI-SORB is a long step forward in setting and keeping power-driven equipment level while combating the destructive forces of vibration.

Empco Jacks are self-aligning to give you the quickest, easiest, most accurate machine leveling ever known.

For precise machine leveling and maintenance you will save time and money if you use Empco Jacks with VI-SORB Mounting Pads. Write for complete information and prices today!

Remember: A level machine—kept on the level—does better work and lasts longer.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

BREVITY—Identify by IEN - 3659 if you write the maker

TRIPLE-ACTION EXTINGUISHING EFFICIENCY

1. HIGH VELOCITY WaterFOG
2. STRAIGHT STREAM
3. LOW VELOCITY WaterFOG

ROCKWOOD SG-48 WaterFOG NOZZLE

These three types of discharges from Rockwood SG type WaterFOG Nozzles will quickly control and put out fires in flammable liquids and ordinary combustibles.

They will out-perform any other Fog nozzle operating on either high or low pressures for all-around fire fighting purposes. Rockwood SG type WaterFOG Nozzles are more efficient and will protect firemen from fire, smoke and fumes.

Designed for use in industrial plants, chemical plants, oil refineries, mercantile and public buildings and municipal fire departments.

Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories. *Write for bulletin C-501R.*

ROCKWOOD SPRINKLER CO.
48 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 3660 If you write the maker

TUF-STUF'S
best proving ground is in the air!

It pays to specify **TUF-STUF** aluminum bronze alloys for parts that must stand up

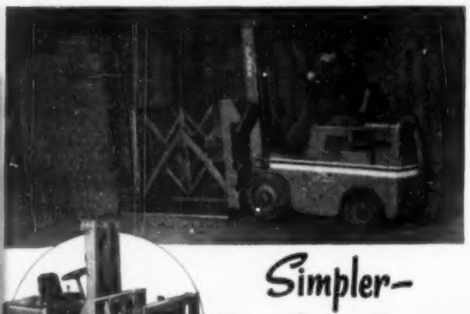
Because they are both light and tough, TUF-STUF aluminum bronze alloys have proven invaluable in America's aircraft as valve-seat inserts, spark plug inserts, valve guides, gears and other vital parts.

If your product requires machined parts that are strong but light, resistant to corrosion, long wearing and resistant to oxidation even at high temperatures, then TUF-STUF is the right alloy for the job.

TUF-STUF alloys are furnished in the form of forgings, rods and screw machine parts. They fill Federal Specification QQ-B-666, Grade B, and several other variations. Because of the increased use and demand for both aluminum and copper, jobs carrying a Defense Order Number are receiving first consideration. 58

MUELLER BRASS CO., PORT HURON 27, MICH.

BREVITY—Identify by IEN - 3661 If you write the maker



Simpler—Sturdier—Faster Safer—

THE REDESIGNED CLARK PUL-PAC

"Where it's applicable, it's unbeatable"

A hydraulically-operated pantograph-type linkage extends and retracts the pusher-rack and gripper-jaw, with these important advantages:

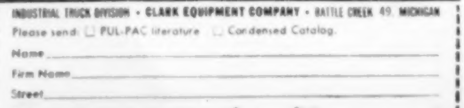
- shorter hydraulic stroke, more powerful piston
- elimination of bending forces to which old-type longer piston was subject
- increased operating speed
- all PUL-PAC mechanism *in front of uprights*—maximum visibility and safety.

A great money-saver since the day it was introduced, the PUL-PAC eliminates the conventional space-consuming pallet and handles unit loads assembled on low-cost carrier sheets. Today's redesigned PUL-PAC does that job more efficiently and more profitably. Simpler, sturdier, faster, safer, it reaches new heights as a money and manpower saver.

The PUL-PAC method might be the most efficient, the most economical for *your* operation. Check on it with your Clark Dealer—he's listed in the yellow pages of your telephone directory. Or send the coupon, attached to your business letterhead, for PUL-PAC literature.

MATERIALS HANDLING EXPOSITION
CHICAGO
1951

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS



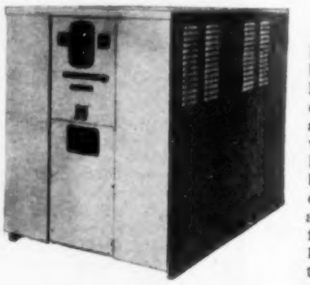
INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49, MICHIGAN
Please send: ☐ PUL-PAC literature ☐ Condensed Catalog.
Name ____
Firm Name ____
Street ____
City ____ Zone ____ State ____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

BREVITY—Identify by IEN - 3663 If you write the maker

CONTROL . . Voltage regulator and transformer for plant circuits

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.



Inductrol Power Pack is a new assembly of voltage regulator, transformer, circuit breaker and associated equipment with which relatively high voltage can be brought to a point of distribution in a plant and there transformed for use. Regulated low voltage is maintained at plus or minus 10 per cent in 110 or 220-volt, single or three-phase lines. Three single-phase assemblies rate 15, 25 and 37½ kva., are available with either 480 or 600-volt input and output at 120 or 240 volts in arrangement for field selection. Approximate price ranges from $2,150 to $2,600. Three sizes for three-phase, 60-cycle circuits rate 50, 75 and 100 kva. with input at 480 or 600 volts and output at 208Y/120 volts. List price in this case ranges from $4,060 to $4,980.

The assembly is supplied in packaged form ready for connection into a circuit. Its current-conducting parts are metal enclosed. The complete unit is suited for overhead or floor installation. Branch circuits can be controlled from a separately mounted panelboard. Power can be brought to a load area at the relative high voltage with substantial saving in electric cable. The output can be employed to regulate power supplied to equipment such as resistance heaters, infrared equipment, electronic apparatus, precision instruments and controls as well as for lighting and normal equipment operation. Illustrated detail information is contained in new 8-page bulletin GEA-5571.

BREVITY—Identify by IEN - 3664 If you write the maker

EXTINGUISHING . . Dry chemical unit for use on liquid and electrical fires

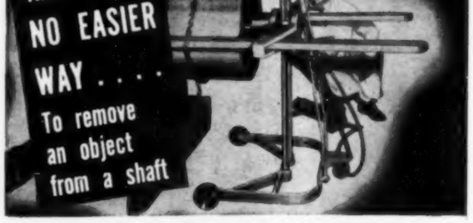
Source: SAFETY FIRST PRODUCTS CORP. 168-72 Saw Mill River Road, Elmsford, N. Y.

Safe-T-Meter trade names new 15-lb. portable hand extinguisher employing the company's dry chemical powder and nitrogen under pressure. The meter, from which the extinguisher gets its name, shows condition in the cylinder, indicates when recharging is required. This can be done by the user who refills the cylinder with chemicals supplied by the company and inserts a new nitrogen energizing unit which the company also provides.

The chemical is non-toxic, non-corrosive, non-abrasive. It will not conduct electricity. It is not affected by heat to 150 deg. F. or by cold, dampness or dryness. It is safe to use inside a building or out of doors.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3665 If you write the maker



The New, Improved Hydraulic

PULLEY PULLER

Enables one man to remove a pulley, gear, pinion, or other object from a shaft in minutes! No crow bars, sledges, or blow torches. No damage. Puller is adjustable, easily moved, rugged. Hundreds now in use in industry.

5-ton size **$62.50**
★
20-ton size **$290.00**
★
50-ton size **$655.00**
(F.O.B. Factory)

Write for complete information — Catalog A

INDUSTRIAL ENGINEERING EQUIPMENT CO.
122-124 E. 4th St. Davenport, Iowa

BREVITY—Identify by IEN - 3666 If you write the maker

TAKE A LESSON FROM THE BIG USERS...
SPECIFY ROBERTSON SEGMENTS FOR YOUR BLANCHARDS

Surface grinding? Whether the job is 30" x 30" boiler plate or tiny thread chasers, you'll do better with a Robertson.

One large company, grinding steel discs 11½" in diameter, averaged six pieces every five hours—24 discs for each set of segments—with a conventional wheel. On the same job, a Robertson Segmental Wheel finished six pieces in two hours—54 discs a set of segments. Greater wheel life, more production by far, even lower power costs!

Hundreds of plants are getting results like these every day. Blueprint your grinding problem and let us show you how yours can be one of them. Or send for the informative booklet "How to Buy Production Time."

ROBERTSON MANUFACTURING COMPANY
TRENTON 5, NEW JERSEY
Resin-Bonded and Vitrified-Bonded Grinding Wheels • Mounted Wheels • Segments

BREVITY—Identify by IEN - 3667 If you write the maker

TEMPERATURE CONTROL

Five Ranges of 150, 350, 450, 650 and 1000 deg. F. Thermostatic element operates electric switch. Switch capacity to 500 watts ac. 50 watts dc.

This Model M Indicating Temperature Control is installed to operate a solenoid or motor valve in a gas, oil or steam line and thus regulate flow in step with heat requirements. It is employed to control the operation of electric heating elements, relays, motors. It automatically maintains temperature (where you set the red-colored pointer on its temperature-indicating scale) in an oven, melting pot, platen, drier, or any heated equipment.

This electric control is available in two and three-wire designs for ac. and dc. control circuits. The thermostatic element is our mercury-actuated flexible unit, powerful, positive, accurate. All elements are changeable. List prices of the complete control range from $62 to $74.

Send for Bulletin 505-C for detail information

THE PARTLOW CORPORATION
4 Campion Road New Hartford, N. Y.

BREVITY—Identify by IEN - 3668 If you write the maker

'Shear-Seal' Valves

The 'Shear-Seal' Principle is an exclusive Barksdale development for control of extreme pressures. Fluid flow is always through the center of the 'Shear-Seal'—NEVER between sealing surfaces as in conventional valve principles. Optically flat sealing surfaces of 'Shear-Seals' and porting disc (rotor) are protected by perfect contact at all times. Erosion or 'wire drawing' are not experienced even with extremely dirty high velocity fluids. The higher the pressure, the tighter the seal.

Exceptionally easy operation of Barksdale valves, regardless of pressure, is due to a balanced hydraulic load on the 'Shear-Seals' further relieved by large ball thrust bearings.

Self-alignment and wear compensation of 'Shear-Seals' plus their self cleaning and polishing action against the rotor actually improve the valve with use.

Write for the new Manual Valve Catalog 18-1, which covers 4-Way Selector, Shut-Off, Dual Pressure Selector, and other Barksdale valves for pressures ranging from 0 to 6000 psi.

BARKSDALE VALVES
1566 EAST SLAUSON AVENUE • LOS ANGELES 11 • CALIFORNIA

▼ BREVITY—Identify by IEN - 3669 If you write the maker ▼

SAVE on OPERATING COSTS and RENT with CARD *Sturdi-Lite* SAFETY LADDERS

EASY to move around, SAFE to work on, handy shelf or basket at top. Amazingly LIGHT WEIGHT but STRONG tubular ALUMINUM construction, including hand rails. Sturdy one-piece steps, non-skid rubber treads. Ball-bearing casters on two rear legs and front Swiveling Caster. Heavy coil spring keeps the two front rubber feet off floor until a person steps on ladder, then they lower and rest securely on floor.

MANY Time-Saving USES in factory assembly lines, maintenance work, stock, tool and file rooms, etc.

SAVE SPACE—stack things HIGH in files, shelves, bins, lockers, etc. They're easy to get at, with CARD SAFETY LADDERS.

For NARROW ISLES—18" width in 3-step, 4-step and 5-step with shelf or basket at top.

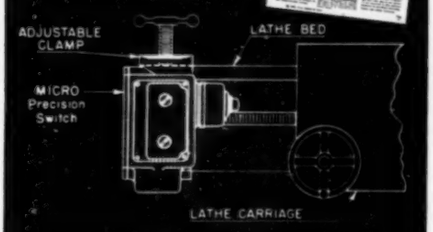
For WIDE AISLES—24" width in 4-step, 5-step and 6-step width shelf only at top.

ALSO 2-step Stools and Rollaways. Write.

D. R. CARD COMPANY
National Distributor
829 MERCHANDISE BLDG.
MINNEAPOLIS 3, MINN.
Mfrs.: BURD METAL PRODUCTS
Clearwater, Fla.

▼ BREVITY—Identify by IEN - 3670 If you write the maker ▼

"MICRO TIPS" is full of ideas like this



While there are many ways to install adjustable limits on lathes, shapers and similar machines this sketch shows how one plant engineer did this by mounting a snap-action switch on an adjustable bracket.

With new machinery hard to get, plant engineers, electricians and maintenance men find MICRO TIPS a gold mine of information on how snap-action switches revitalize present equipment.

All the ideas published in MICRO TIPS are available to you for adaptation to your use. They show you how other plant men have used MICRO precision switches to improve product quality, lower production costs, make machines automatic, increase production and protect equipment, products and personnel.

These are time-tested practical ideas sent to MICRO TIPS by plant engineers and maintenance men in every phase of industry. Get on the mailing list for MICRO TIPS today.

MICRO SWITCH distributors with complete stocks are located in over 100 cities to serve you. Look in your classified phone book.

MICRO SWITCH — *MICRO . . . first name in precision switches*

MICRO SWITCH
FREEPORT, ILLINOIS
A Division of Minneapolis-Honeywell Regulator Company

Copr. 1951, Minneapolis-Honeywell Regulator Co.

▼ BREVITY—Identify by IEN - 3672 If you write the maker ▼

CONTROL . . Magnetic amplifier for servo mechanisms and controls

Source: MAGNETIC AMPLIFIERS INC.
11-56 44th Drive, Long Island City 1, N. Y.

Components including coils, cores, rectifiers are enclosed in a sealed metal can in this new magnetic amplifier. Leads are brought out through sealed terminals. The new line includes units for operation on 115-volt, 400-cycle ac. to include power ratings of 5, 10, 15 and 20 watts. Others, also in the line, are available for 115-volt, 60-cycle ac. with output to 5 and 10 watts.

Input resistances of 1, 20 or 400 ohms are available. Outputs range from 26 to 220 volts. A 10-watt assembly measures about 3⅛ by 3 by 4¾ inches. Solder terminals and four mounting studs are standard design.

▼ BREVITY—Identify by IEN - 3673 If you write the maker ▼

PROTECTING . . Reconditioning service for industrial gloves, work clothing

Source: WASH-RITE CO.
1414-20 Cornell Ave., Indianapolis 2, Ind.

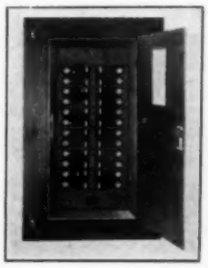
Company invites trial order

New service, initially established by the company for operation on a local basis, is now available nationally to clean, reclaim and process work gloves, aprons, raincoats, suits, boots for reuse. The service operates on items made of leather, cotton, rubberized cloth, oilskin, neoprene. It applies to aprons and garments treated with plastic coatings. Shipments of soiled items sent to the company are sorted to discard those that cannot be reclaimed. The balance of the shipment is processed and returned at a price considerably lower than that for new items of the same types.

▼ BREVITY—Identify by IEN - 3674 If you write the maker ▼

SWITCH . . Panelboard assembly, fusible design for lighting circuits

Source: SQUARE D CO.
Box 272-A, Roosevelt Park Annex, Detroit 32, Mich.



Steel housing measuring 17 in. in width by 4¼ in. in depth is provided with 4-in. wiring gutters in this new Type-NTPR panelboard assembly. It is available in 4 to 40 circuits for ac. or dc. current. Knockouts are provided in the ends and sides. Four branch circuits are contained in each one-piece Bakelite block. Each is fused.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3675 If you write the maker ▼

FABRICATED WIRE CLOTH AND PERFORATED METAL

Screens -- Strainers -- Filters

Buy from a plant that's equipped to do your fabricating job—quickly, easily—all under one roof. Highly trained personnel, modern equipment, large material stocks, enable Pittsfield to speedily fill your needs economically and to high standards of performance.

FABRICATION SERVICES
- Shearing
- Soldering
- Brazing
- Welding
- Crimping
- Plating
- Stamping

SPEEDY QUOTES AT NO OBLIGATION

PITTSFIELD PRODUCTS, Inc.
ANN ARBOR, MICHIGAN

▼ BREVITY—Identify by IEN - 3676 If you write the maker ▼

CONTROL POWER BETTER

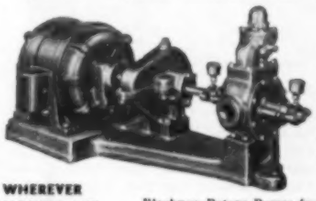
ROCKFORD CLUTCHES

▼ BREVITY—Identify by IEN - 3677 If you write the maker ▼

IN HAND PUMPS AS IN POWER PUMPS . . .

BLACKMER performance

SPEEDS LIQUID MATERIALS HANDLING



for POSITIVE CONTROL OF MOST LIQUIDS FROM GASOLINE TO MOLASSES

WHEREVER LIQUIDS ARE HANDLED

Blackmer Pumps enjoy preference based on performance in all types of industrial and processing plants. Learn why plant engineers prefer Blackmer.

Blackmer Rotary Pumps from 5 to 1500 GPM capacities . . . hand or power-operated . . . provide positive displacement and high suction lift with volatile or viscous liquids.

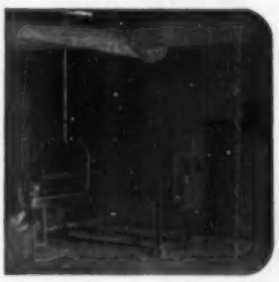
Get "FACTS" about Rotary Pumps

Write for "FACTS." Latest designs, operating and service features.

BLACKMER PUMP COMPANY
GRAND RAPIDS, MICHIGAN

▼ BREVITY—Identify by IEN - 3678 If you write the maker ▼

HYDRO-CLONE



suppresses dust from plastics

Above is the Type "R" Hydro-Clone used to assure clean air in the plastics division of a large manufacturing plant. This Hydro-Clone is specified when space is at a premium and capacity not over 12,000 cfm is required.

Type "R" is of compact design suitable for indoor installation. It reduces dust to harmless sludge . . . requires about 1 gal of water per 1,000 cu ft of air treated . . . fully described in Bulletin FY-127.

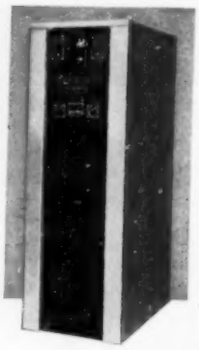
Write for full information about this and other models for every industrial need.

WHITING CORPORATION
15629 Lathrop Ave.
Harvey, Illinois

FREE
New booklet of Practical Information on Dust Collection. Ask for Bulletin FY-142.

BREVITY—Identify by IEN - 3679 if you write the maker

New G-E three-phase Inductrols



(dry-type induction voltage regulators)

- Require less floor space than any 3-phase regulators previously available.
- For circuits up to 500 amps, 600 volts and below.
- Will help keep production up—by keeping voltage up.

A new line of "Inductrol" voltage regulators having a 3-phase winding on a single core has been announced by General Electric. These require considerably less floor space than Triplex assemblies which use three single-phase regulators on one base.

The new regulators are completely self-contained. Steel cabinets enclose all live parts. Ratings up to 300 load amperes are self-cooled; higher ratings are forced-air cooled.

For full information contact your nearest G-E Apparatus Sales Office or your authorized G-E Apparatus Agent. *Apparatus Department, General Electric Co., Schenectady 5, New York.*

GENERAL ELECTRIC

404-78

BREVITY—Identify by IEN - 3680 if you write the maker

DOUBLE-ACTION AIR CYLINDERS

Mounting	Bore				
Horizontal	1½"	2¼"	3"	4"	5"
Vertical	1½"	2¼"	3"	4"	5"
Face	1½"	2¼"	3"	4"	5"
Swivel	1½"	2¼"	3"	4"	5"

Length of stroke optional

The new Mead Air Power Catalog shows the full line of single and double-acting cylinders, and air-operated Presses, Vises, Chucks, Hammers, Work Feeders — for Faster, money-saving production. Write today!

MEAD SPECIALTIES COMPANY

4114 NO. KNOX AVE., DEPT. EA-41, CHICAGO 41, ILL.

BREVITY—Identify by IEN - 3681 if you write the maker

SET THIS METER FOR BATCH MEASUREMENT OF LIQUIDS

NIAGARA Electricontact METERS

Accurate . . . Automatic

Niagara Meters offer the simplest method of measuring commercial liquids quickly, accurately. Obsolete tanks and gauge sticks are replaced by Niagara volumetric meters. An electric contact unit provides automatic shut-off for batch measurements.

Engineered for a wide variety of industrial uses, Niagara Electricontact Meters are available in several models, including stainless steel for metering chemicals. It will pay you to investigate dependable Niagara Meters.

SEND COUPON FOR COMPLETE DETAILS

I would like complete information sent me on how Niagara Electricontact Meters increase processing accuracy for:

Liquid _____

Temp. _____ °F. Pressure _____ p.s.i.

Flow rate _____ g.p.m.

Maximum batch _____

Company _____

By _____

Address _____

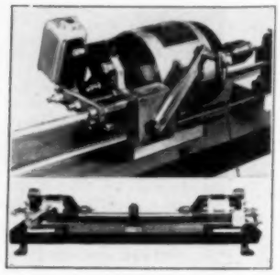
BUFFALO METER CO.

2929 MAIN STREET BUFFALO, N. Y.

BREVITY—Identify by IEN - 3682 if you write the maker

DRILLING . . Opposed head machine countersinks, chamfers, removes burs

Source: BLACK DRILL CO.
1402 E. 222nd St., Cleveland 17, Ohio



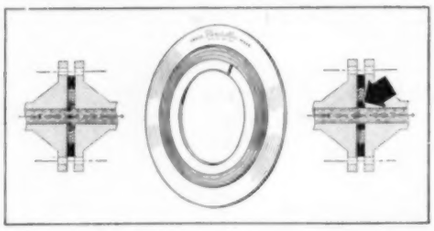
Positive feed by a foot-operated gear and rack mechanism moves the opposed spindles in this new design of the company's drilling and countersinking machine in equal amounts through their maximum 1 in. of travel. The design represents an improvement over the one previously described IEN-8473-50. It is available with ¼ to 1-hp. motor. Either of two speeds at 1,800 or 3,600 rpm. can be specified. Operation at 1,200 rpm. is available in sizes to ¾ hp. and also 900 rpm. in sizes to ½ hp. Operation is on 220 or 440-volt three-phase ac. Maximum distance between the chucks is 20 inches.

Work is held in a fixture at the center of the machine to stand 4¼ in. above the base plate to which the two motor assemblies can be bolted at various center distances. A key slot running through the length of the base holds the spindles in alignment. Spindle movement within each motor moves its rotor out of magnetic center and takes advantage of magnetic pull to retract it when feed pressure is released.

BREVITY—Identify by IEN - 3683 if you write the maker

SEALING . . Metallic packing for pipe flanges, 150 to 2,500 pounds

Source: FLEXITALLIC GASKET CO.
928 Eighth Ave., Dept. I, Camden 2, N. J.



New inner ring, shown in the illustration, has been added to the company's flexible metallic packing to provide a construction known as Style CGI. The ring minimizes turbulence in the pipe line by filling the inner recess between the flanges. The ring also acts as an inner compression member to limit pressure on the metallic packing and it prevents contact between the packing itself and the fluid in the line.

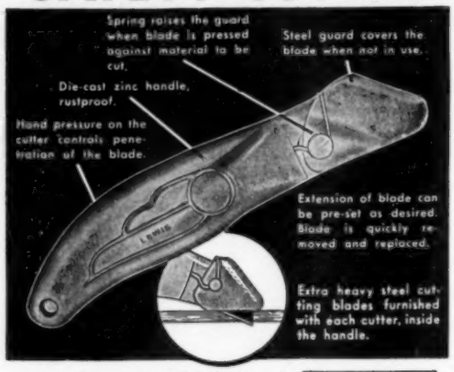
The packing is a spiral-wound design with alternating formed plies of metal and filler material. The various metals such as Monel Metal, nickel, Inconel, stainless steel and filler materials including asbestos compositions, mastic materials, Teflon can be specified. Sizes are available to order for given pipe lines on pressures to 2,500 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3684 if you write the maker

A New Invention . . . Safe . . . Different

LEWIS Automatic SAFETY CUTTER



Here is a new patented knife that cuts swiftly, surely, safely . . . yet protects the user from injury. Always safe because the blade is guarded — always ready to use because there's nothing to adjust.

$1.50

FLASH BOX OPENER CO., Inc.

52 W. Houston St. • New York 12, N. Y.

BREVITY—Identify by IEN - 3685 if you write the maker

How You Save with the NEW Niagara Method of Air Conditioning

Using "HYGROL" Absorbent Liquid

Because it absorbs moisture from the air directly, the new Niagara Controlled Humidity Method uses less, or no, mechanical refrigeration for dehumidifying. You save first costs and installing of heavy machinery. You save space, maintenance expense, power; get easier, more convenient operation.

Using "Hygrol" absorbent liquid gives complete control of temperature and relative humidity. Especially, it is a better way to obtain dry air for drying processes, packaging hygroscopic materials, preventing moisture damage to metals, and obtaining better quality for chemical process and food products—or in obtaining better results in comfort air conditioning at lower refrigeration costs.

Filtered air is dehumidified by passing through a spray of "Hygrol" which removes airborne moisture. This liquid is non-corrosive; it contains no salts or solids to precipitate and cause maintenance troubles. It is continuously re-concentrated at the same rate at which it absorbs moisture, providing always the full capacity of the air conditioner, automatically.

Food Packaging under Controlled Humidity

Units provide a range of capacities from 1000 to 20,000 C. F. M. Multiple unit installations are in use successfully. Records of results are available. For further information, write Niagara Blower Co., Dept. EN, 405 Lexington Ave., New York 17, New York.

BREVITY—Identify by IEN - 3686 if you write the maker

fluid POWER

FOR CRANES HOISTS AND MONORAILS

Propel loads up to 5 tons on monorails or cranes with the compact Calabar fluid Tractor. It travels at speeds ranging from 50 to 250 FPM . . . is applicable to flat or tapered track from 2" to 6¼" . . . starts smoothly without jerking or swinging the load . . . is practical on curves and inclines. Wearing parts are totally enclosed and operate in oil bath. Pendant push-button controlled. Built in ½ & ¾ H P sizes. Dealers everywhere.

CALABAR CORP. South Gate, California

calabar fluid TRACTORS

BREVITY—Identify by IEN - 3687 if you write the maker

GOV'T. CONTRACTORS

SPARE PARTS BOXES

CONFORMING TO
Federal Specifications
Military Specifications
Air Force—Navy
Aeronautical Specifications
Navy Department Specifications

WRITE FOR FURTHER INFORMATION

Muckle MANUFACTURING CO.

OWATONNA, 33 MINN.

BREVITY—Identify by IEN - 3688 if you write the maker

STANDARD *ONLY*
with
THRIFTMASTER
FULL BALL BEARING
Completely Adjustable
UNIVERSAL JOINT DRILLHEADS

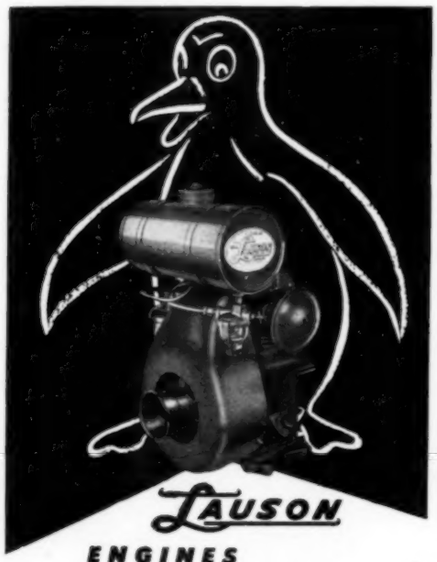
Here's a **premium feature** that comes in the **regular package** when you buy Thriftmaster Universal Joint Drillheads. Full Ball Bearing construction coupled with Thriftmaster design and manufacturing dependability, assures smooth, steady, positive drillhead performance **that will last!**

THRIFTMASTER UNIVERSAL JOINT DRILLHEADS
2 to 10 (or more) Spindles . . . Capacity to 7/8" in Cast Iron
6" to 10" (or larger) Circle

OTHER THRIFTMASTER PRODUCTS
Special Fixed Center and Standard Eccentric Adjustable Drillheads . . . Multiple Spindle Automatic Reverse Tap or Drill Attachments

THRIFTMASTER PRODUCTS CORPORATION
1040 N. Plum St., Lancaster, Pa.
also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS
4 Sizes • Friction & Positive Drives Capacity 2-56 to 2" in Steel

BREVITY—Identify by IEN - 3689 if you write the maker



LAUSON
ENGINES
RUN *cooler!*
LAST *longer!*

Only Lauson has a stream of cool air directed over both valves at the same time! . . . greatly reducing engine heat! Another Lauson feature is the cylinder — with extra fins and special head for dissipating heat faster — resulting in cooler operation. These extra engineering refinements . . . and many more add up to true dependability and longer engine-life . . . two factors that make Lauson the best engine buy, anywhere!

...RUN *smoother* **TOO!**

Listen to the sweet, velvety purr of a Lauson engine, and you'll know why builders of quality equipment specify Lauson — it's the smoothest power built!

OUTBOARD MOTORS
LAUSON
PORTABLE ENGINES

THE LAUSON COMPANY
New Holstein, Wis., U. S. A., Div. of Hart Carter Co.
In Canada: Hart-Emerson Co. Ltd., Winnipeg

BREVITY—Identify by IEN - 3691 if you write the maker

GRINDING . . Portable electric tool drives mounted wheels at 20,000 rpm.

Source: CHICAGO WHEEL & MFG. CO.
1103 W. Monroe St., Chicago 7, Ill.

Universal motor with permanently-sealed ball bearings, a detachable air-cooled hand piece and a ¼-in. Jacobs chuck make up the assembly of this new Hi-Power grinder. The tool will take grinding wheels to 2 in. in diameter and any ¼ or ⅛-in. shank-mounted wheels, sanding drums, wire brushes, felt and soft-rubber polishing wheels. It measures 11 in. in overall length, weighs 5 lbs. and 10 ounces.

List price is $49.50 for either Model 3500 for operation on 110-volt or Model 3505 for operation on 220-volt current.

BREVITY—Identify by IEN - 3692 if you write the maker

CLEANING . . Acid type powder removes scale in tumbling metal parts

Source: MAGNUS CHEMICAL CO.
1951 South Ave., Garwood, N. J.

Can be handled without danger

D-Scale-RW is a new inhibited acid-type powder mixed with a wetting agent for solution in water at the rate of 4 to 16 oz. per gal. to then apply on ferrous work covered with scale or rust in a tumbling barrel. The solution promotes removal of the scale, materially reducing required interval, as compared to work that is tumbled without it. Heating the solution speeds the action.

Fresh water is run into the barrel after the scale has been removed to flush the parts and kill further action. Excess water is then dumped out and a pound or two of alkali is added to neutralize the acid. Finally the barrel is run about five minutes and drained.

BREVITY—Identify by IEN - 3693 if you write the maker

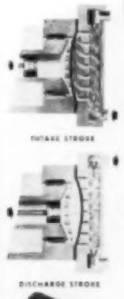
CASTER . . Pneumatic wheel design rates 1,200 pounds, absorbs impact

Source: AEROL CO.
2818-22 Ontario St., Burbank, Calif.

New ball bearing caster has been developed for use on industrial trucks handling loads such as explosives that must be guarded against vibration and impact. The new caster is spark proof, employs enclosed bearings. Its wheel mounts a 10-in. pneumatic tire.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3694 if you write the maker



The LAPP PULSAFEEDER principle of proportional pumping combines advantages of *PISTON* and *DIAPHRAGM* design.

Reciprocating piston action—positive displacement. Diaphragm acts only as balanced, floating partition, isolates chemical being pumped. Pumping rate continuously variable while pump is in operation. Also available: Auto-Pneumatic Pulsafeeder with automatic-pumping-rate control, responsive to variable flow, pH, temperature, liquid level, pressure or other variables.

Lapp PULSAFEEDER
PISTON-DIAPHRAGM CHEMICAL PROPORTIONING PUMP
WRITE for Bulletin 262 with complete description and specifications.
LAPP INSULATOR CO., INC., PROCESS EQUIPMENT DIVISION, 427 MAPLE STREET, LE ROY, N.Y.

BREVITY—Identify by IEN - 3695 if you write the maker

Century **SYNCHRONOUS MOTORS**
For Power Factor Correction
REDUCE MAXIMUM CURRENT DEMAND

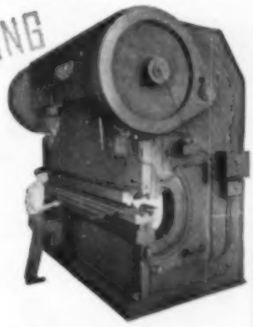
Century high speed synchronous motors are available in sizes from 25 to 250 horsepower, unity power factor — and 20 to 200 horsepower, .8 power factor — to meet the requirements of power factor correction.
Century Synchronous motors are especially suitable for such applications as blowers, fans, centrifugal pumps, and similar equipment that operates continuously at uniform load.
The complete line of Century motors includes a wide range of types and kinds from 1/6 to 400 horsepower — single phase, polyphase and direct current.

SPECIFY CENTURY MOTORS FOR ALL YOUR ELECTRIC POWER REQUIREMENTS

CENTURY ELECTRIC CO. 1806 Pine St., St. Louis 3, Mo
Offices and Stock Points in Principal Cities

BREVITY—Identify by IEN - 3696 if you write the maker

CORRUGATING
Fast and Easy



Large corrugations are made singly and smaller corrugations several at a time with Steelweld Presses. This work can be done to hairline accuracy. With proper dies the corrugated metal will not curl; the corrugation tops will lie in a flat plane. The press illustrated will corrugate metal in lengths to 10 feet between housings of machine. Other Steelwelds in sizes to 750 tons will handle lengths to 20 feet.

STEELWELD BENDING PRESSES CATALOG No. 2010

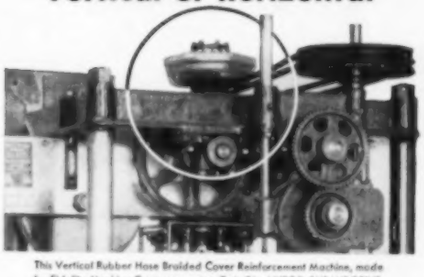
Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4234 East 281st St., Wickliffe, O.

STEELWELD PRESSES

BREVITY—Identify by IEN - 3697 if you write the maker

S-m-o-o-t-h power
vertical or horizontal



This Vertical Rubber Hose Braided Cover Reinforcement Machine, made by Fidelity Machine Company, uses a Twin Disc HYDRO-SHEAVE DRIVE.

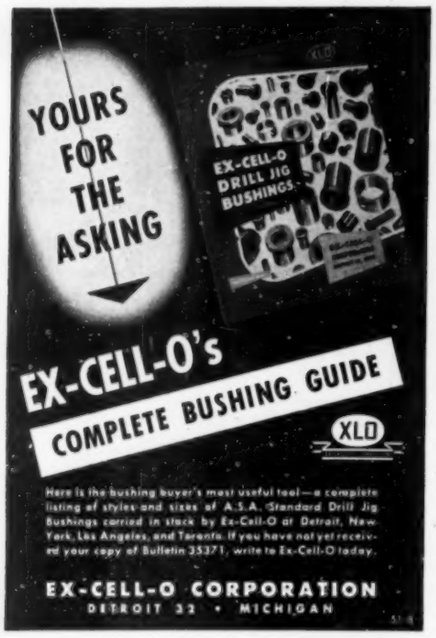
Position makes no difference to the Twin Disc HYDRO-SHEAVE DRIVE. You can attach it to a vertical shaft or a horizontal one. It eliminates jerky starts and power stalls—often permits you to use a smaller engine or motor without overloading. So easy to install, it is well worth your investigation for smooth, stall-free performance. Offered for use with ¼ to 50 hp engines and motors. Write for Bulletin 145-B.

Clutches & Hydraulic Drives

TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

BREVITY—Identify by IEN - 3698 If you write the maker



BREVITY—Identify by IEN - 3699 If you write the maker

BREVITY—Identify by IEN - 3700 If you write the maker

Six to ten times faster than conventional air cylinders, the Bellows Super-Speed Air Motor develops tremendous speed and power from normal air pressure. At 100 lbs. air, power is great enough to punch ½" dia. hole through 1/16" thick mild steel. Ideal for staking, riveting, forming, swedging, stamping or punching.

The Super-Speed Air Motor is a complete power unit with built-in low voltage Electroaire directional valve and speed regulators. (Also available with manually controlled valve.) Only one air connection needed.

Write for Bulletin 1163 today.
Address: Dept. IEN 451.
The Bellows Co., Akron 9, Ohio.

2½" BORE • Stroke Lengths 2½", 4", 6", 9", 12" • Seven Mounting Styles

The Bellows Co. Akron 9, Ohio

BREVITY—Identify by IEN - 3701 If you write the maker

CONSTRUCTION . . Power shovel mounts on tractor to dig and load

Source: PIPPIN CONSTRUCTION EQUIPMENT INC. 51 Bridge St., White River Junction, Vt.

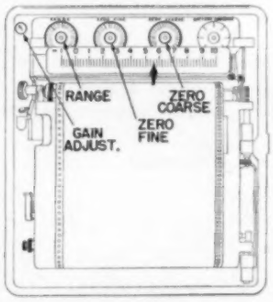
Shovel bucket with 5 cu. ft. capacity mounts at end of a 6-ft. tubular shank on a 7½-ft. boom. It can be installed for forward action as a shovel or rear action as a back hoe. It will cut a trench to 22 in. in width as a shovel or 24 in. as a back hoe and to 7 ft. in depth in the latter assembly. The attachment is designed for use on a Ford or Ferguson tractor. It is known as Pippin Excavator Model EX-100.

Movements are by hydraulic pressure supplied by a pump that connects to the tractor engine. The pressure is controlled at four valves for lateral swing through a 110-deg. arc, for vertical swing of the boom, vertical swing of the shovel shank and for application or retraction of a spade support which takes the digging load from the tractor wheels. The shovel can be elevated for truck loading to 10 ft. above grade.

BREVITY—Identify by IEN - 3702 If you write the maker

TESTING . . Electronic recorder traces strain, temperature, speed

Source: LEEDS & NORTHRUP CO. 4934 Stenton Ave., Philadelphia 44, Pa.



A few millivolts can be spread across the entire width of the strip chart in this new electronic recorder for magnified recording of some particular part of a desired range as in strain-gage, temperature-difference, speed measurements. The range is adjustable from a minimum across-chart span of 1.1 millivolt to a maximum range span of 22 millivolts. Uncalibrated coarse and fine rheostats provide for maximum zero suppression between minus 50 and plus 50 millivolts, continuously adjustable.

Adjustments are independent, the range remaining constant during zero adjustment and zero suppression remaining constant during range adjustment. Sensitivity is adjustable also by means of an amplifier gain control.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3703 If you write the maker

BREVITY—Identify by IEN - 3704 If you write the maker

A FAST WAY TO REDUCE COSTS

Capacities from ⅛ to 1 ton
110, 220 or 440 volts

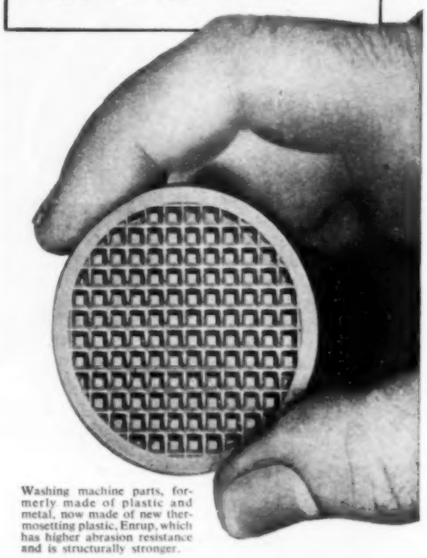
Hundreds of plants are cutting overhead with the CM COMET . . . a sturdy, high-speed, portable *electric* hoist. All working parts fully enclosed and permanently lubricated. Don't buy until you see the CM COMET. Ask your local distributor for a demonstration.

Write for Bulletin 138
Get all the facts

CHISHOLM-MOORE
HOIST CORPORATION
(Affiliated with Columbus McKinnon Chain Corporation)
GENERAL OFFICES, AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland • San Francisco • Los Angeles

BREVITY—Identify by IEN - 3705 If you write the maker

What's U. S. Rubber doing to bridge the gap between hard and soft rubber?



Washing machine parts, formerly made of plastic and metal, now made of new thermosetting plastic, Enrup, which has higher abrasion resistance and is structurally stronger.

The new "U. S." thermosetting plastic, Enrup, can be made flexible and elastic as soft rubber, or rigid as hard rubber. Enrup offers entirely new possibilities to design engineers. The washing machine parts, shown above, are made of Enrup because its abrasion resistance and structural strength are greater than the combination of metal and plastic formerly used.

Enrup can be made into almost any shape or form, simple or complex. It can be punched, sanded, sawed, nailed, bolted, molded and machined. Perhaps Enrup is just what you've been looking for to improve your product or your manufacturing operation.

For more details, write to address below.

PRODUCT OF U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

BREVITY—Identify by IEN - 3707 if you write the maker

free

MONEY-MAKING FACTS ABOUT TUFFLEX

These two folders are yours for the asking. They give technical facts and specifications about Tufflex—the fiber felt material that offers industry a rare combination of low thermal conductivity—effective shock absorption—vibration dampening—highly efficient cushioning—better protective padding. Tufflex is finding new uses among manufacturers who want to cut production costs and increase quality. Write now for descriptive literature and a sample of Tufflex. Wood Conversion Co., Dept. 126-41 First National Bank Bldg., St. Paul 1, Minn.

A PRODUCT OF WEYERHAEUSER

TUFFLEX*

*REG. U. S. PAT. OFF.

BREVITY—Identify by IEN - 3708 if you write the maker

Only *Cyclo-twist* CARBIDE TIPPED

MASONRY DRILL BIT

Positively Expels Dust as it drills

For only Cyclo-twist has the Steel Shank with:

- Double flutes running from cutting edge to shank end.
- Same diameter as carbide tip.

Thousands of repeat orders prove users have found Cyclo-twist stronger and more accurate; they insist on Cyclo-twist. Now available in 3/16" to 1" sizes in standard lengths and extra long lengths up to 36".

Also available: Carbide Tipped Thunderbolt Hammer Bit for granite and hard concrete.

New England CARBIDE TOOL CO., INC.

60 BROOKLINE ST., CAMBRIDGE 39, MASS.

BREVITY—Identify by IEN - 3709 if you write the maker

ONE WASHER INSTEAD OF TWO WITH WEATHERSEAL!

The Weatherseal Washer combines a metal and a compressive, sealing washer, hydraulically bonded and "cured" together to provide just one piece to handle. The compressive material is composition rubber or neoprene, and it does a real job of sealing as this actual cutaway photo shows:

Note that the neoprene is extruded under compression to completely seal the outer edge of the metal washer as well as the fastener shank, through the metal sheets to the nut.

APPLICATIONS: Sheet metal roofing and siding • Auto body and chassis assembly • Sheet metal ductwork • Porcelain-to-metal assemblies.

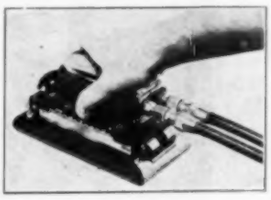
TOPSEALS are fasteners you specify or supply—nail, bolt, sheet metal screw, etc.—assembled in our factory with Weatherseal Washers, ready for use. Reduce your inventory items with TOPSEAL! Write for sample and prices, stating your fastening or sealing problem. Proven production performance and large stocks maintained for quick shipment assures you of meeting your own production schedules.

FABRICATED PRODUCTS COMPANY
WEST NEWTON, PA.

BREVITY—Identify by IEN - 3710 if you write the maker

SANDING . . Portable pneumatic tool for composition, metal, plastic, wood

Source: SUNDSTRAND MACHINE TOOL CO.
2529-33 11th St., Rockford, Ill.



Two hose lines, one for pressure to drive the rotary pneumatic motor that reciprocates the sanding pad at 3,000 oscillations per min. in this new machine and the other for water to be employed in wet sanding work, are connected at the rear of this new portable tool. Both are controlled by manipulating a palm valve on the top of the housing in natural position under the worker's hand.

The tool weighs 5½ lb., provides $\frac{3}{16}$-in. stroke. It operates on 50 to 100-lb. pressure. Speed can be controlled between 1,500 and 3,000 oscillations per min. by manipulating the valve. Air consumption is 5½ to 10 cfm. The abrasive paper clip holds 4 to 6 sheets, each measuring ½ of a stock sheet.

BREVITY—Identify by IEN - 3711 if you write the maker

CORROSION PROOFING . . Liquid forms dry metal protecting film

Source: GULF OIL CORP.
352 Gulf Bldg., Pittsburgh 30, Pa.

Dries to handle in four hours

No-Rust No. 6 is a new liquid for brush, dip or spray application on finished metal products requiring surface protection against corrosion in indoor or outdoor storage over considerable periods of time and during shipment from one location to another.

The liquid deposits a film that dries to .008 in. in thickness when applied by dipping at a temperature of 70 deg. F. The film dries sufficiently within four hours to permit handling. Coverage is about 390 sq. ft. per gallon. There is no tendency to settle or separate in storage. The applied film will not crack, chip, scale or disintegrate at temperatures to 0 deg. F. It will not flow at temperatures to 190 deg. F. It is removed with Stoddard solvent, kerosene or similar petroleum solvent.

BREVITY—Identify by IEN - 3712 if you write the maker

HANDLING . . Pallet type box is made of wood, can be stacked

Source: IRONBOUND BOX & LUMBER CO.
102 Hoffman Place, Hillside, N. J.

Hardwood box with a four-way-entry pallet bottom is steel reinforced at the four corners. The reinforcements are shaped for stacking assembly in secure locked arrangement. The box is available in specified sizes. It is intended to handle parts in process for movement between operations and for storing in box lots.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3713 if you write the maker

Precision is the Keynote—in Production and Performance

The word precision perfectly characterizes every relay manufactured by LEACH, and this precision is most apparent in their performance. Whatever the purpose, LEACH can provide relays of advanced design for flexibility, economy and unexcelled performance. Highest standards of engineering, materials and workmanship. For better controls through better relays—contact LEACH.

LEACH RELAY CO.

5915 AVALON BOULEVARD, LOS ANGELES 3, CALIF.
Representatives in Principal Cities of U. S. and Canada

BREVITY—Identify by IEN - 3714 if you write the maker

NEW! **DODGE SLIDE-SET VISE**

Cut away view

SLIDES IN "NEUTRAL"
INSTANT ACTION!
GRIPS CONVENTIONALLY!
FULL POWER!

● Entirely new in principle, with patented fast slide action that speeds work, reduces operator fatigue, saves wear on parts. All the power of a heavy conventional vise (weighs 58 pounds). Jaw slides in "neutral" before you lock it by turning handle in conventional way. No tedious "spinning" in and out. No-Pinch handle protects against blood blisters. Every Dodge Slide-Set pays dividends in greater efficiency and production. *Write now for free Bulletin.*

Dodge Manufacturing Corporation, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

BREVITY—Identify by IEN - 3715 if you write the maker

Other Profit Producing Pheoll Products

Knurled Nuts • Wing Nuts • Semes
Cap Screws • Machine Screws
Phillips Recessed Head Screws
Square Head Set Screws
Tapping Screws

Pheoll THREAD-CUTTING SCREWS

1. Cut Their Own Thread—Fit Perfectly
2. Eliminate Tapping Time—Tap Cost
3. Resist Vibration—Will Not Loosen
4. Are Driven Easily By Hand or Power
5. Used Anywhere—Interchangeable

Pheoll Thread-Cutting Screws are easily driven into untapped, drilled or punched holes. They automatically cut their own mating threads when driven which insures maximum thread contact. This results in tighter fits and increased holding power. The rolled threads of these hardened screws conform to established dimensions and tolerances and are interchangeable with machine screws.

Unit production cost is lowered when these screws are used in assembly work. Now is the time to investigate what Pheoll Thread-Cutting Screws will do for you. Outline your fastening problems and the materials you wish to join.

Pheoll MANUFACTURING COMPANY • 5700 Roosevelt Road Chicago 50, Illinois
SCREWS • BOLTS • NUTS — Industrial Fasteners and Holding Devices

BREVITY—Identify by IEN - 3716 if you write the maker

TWO LOW-COST FAMCO SQUARING SHEARS

POWER SHEARS

$480.00 and up (LESS MOTORIZATION)

● Compare the price and quality of the Famco Power Squaring Shears with any other line on the market. You'll find Famco offers sturdy construction and powerful operation at extremely low initial and maintenance cost. Handles 18 gauge mild steel in 36", 42" and 52" cutting widths. Standard equipment includes gear drive; non-repeat mechanism, easily set for continuous operation; inlaid, precision ground tool steel blades; adjustable front and back gauges; hold-down; and guard.

Write for full details

FOOT SHEARS

$215.00 and up

● Available in five cutting widths from 22" to 52". High grade tool steel blades and balanced leverage permit cutting up to 18 gauge mild steel. Depth settings easily and accurately made.

FAMCO MACHINE CO. • 1303 Racine St., Racine, Wis.

famco COST CUTTING **machines**

ARBOR PRESSES • FOOT PRESSES • POWER PRESSES
FOOT SQUARING SHEARS • POWER SQUARING SHEARS

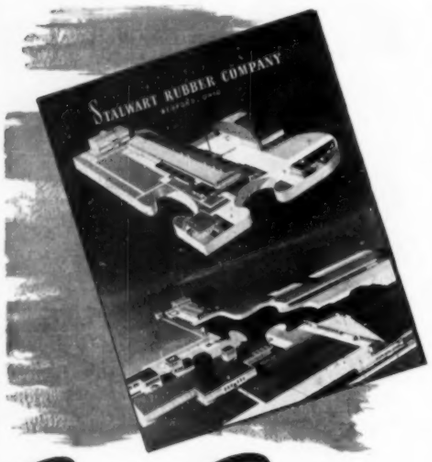
BREVITY—Identify by IEN - 3717 if you write the maker

"Grip-Master," the original screwless drill-press vise is available in four sizes: 3", 4", 6", 8" jaw widths.

● The instantaneous and effortless setting, and guaranteed positive locking of the amazing "Grip-Master" *Screwless* Vise add up to new *savings* on hundreds of drill-press and production line operations. "Grip-Master" also makes an ideal base-structure for jigs and fixtures. Hammer blows will not budge its tenacious grip obtained by an effortless press on the locking-lever. Built-in parallels level work instantly. Write today for full information and prices on the "Grip-Master" line, or ask your Dealer for a demonstration.

NATIONAL MACHINE TOOL COMPANY
DEPT. 171-D RACINE, WISCONSIN

BREVITY—Identify by IEN - 3718 if you write the maker



Rubber Parts...

NEW CATALOG CONTAINS DATA ON COMPOUNDS, APPLICATIONS AND FABRICATION METHODS

This 16-page, illustrated, multi-colored catalog now is available to design, production, purchasing and management personnel. This publication has been compiled to familiarize readers with Stalwart-developed rubber compounds which feature resistance to (1) abrasion, (2) chemicals, (3) high and low temperatures, (4) petroleum products and derivatives, and (5) weathering. Sections of the catalog are devoted to the new and outstanding Silicone Rubber compounds, the major methods of fabrication, and Stalwart production facilities.

More than 60 Stalwart-developed compounds are listed by code number. Charted individually in conjunction with these compounds are their physical properties and general characteristics, as well as suggested applications.

Catalog 51SR-1 will be sent upon receipt of coupon or on letterhead request.

STALWART RUBBER COMPANY

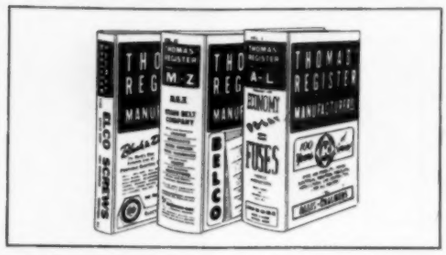
THE STALWART RUBBER COMPANY
Please send (without obligation) your new 16-page, illustrated, multi-colored Catalog 51SR-1.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

4152 NORTHFIELD ROAD • BEDFORD, OHIO

For Your Special Information

ALL MAKERS ARE LISTED IEN S-8



An important part of preparation for defense production lies in assembling essential repair parts for the plant equipment. These parts may become increasingly difficult to obtain. When one or more actually is needed there is no time to wait for its manufacture if serious production holdup is to be avoided. Many alert plant men understand this situation, are looking over their equipment and are making lists of critical parts. Note our suggestion on Regulation 4 of the National Production Authority on page 1.

They are finding, as they do this work, that a good many machines are poorly identified with the makers and so they have an added problem, at least those among them who do not know about the trade-name and A to Z listings in Thomas' Register. In one or another, or both of these parts of the Register, you can find complete names and addresses to match words, initials, and other incomplete identifications to open the purchase trail. This is all in addition to the other sections of the Register which afford comprehensive direction to all makers of all products. Price is $15 plus handling charges. Address Thomas Publishing Co., 467 8th Ave., New York 1, N. Y.

EXPOSITION IN ENGLAND IEN S-9

April 30th to May 11th dates the British Industries Fair in London and Birmingham, England. A total of 490 firms representing a hundred different industries are setting up their exhibits in about a million square feet of exhibit space. The Fair is designed to give American buyers the opportunity to cover practically the entire British market at one time.

ENGINEERING EDUCATION IEN S-10

Granville M. Read, Chief Engineer for E. I. du Pont de Nemours and Company made a constructive offer in a speech at Case Institute of Technology on "Industry's Need for Engineers and Scientists." He offered to take into his engineering department several professors from engineering schools. The offer included payment of their regular salaries plus reasonable expenses for twelve months of experience throughout the organization.

U. S. SAVINGS BONDS IEN S-11

Phone, write or wire to the Savings Bond Division, U. S. Treasury Department, Suite 700, Washington Bldg., Washington, D. C., or get in touch with the local State Director for a copy of the four-point promotion plant to put all workers in your organization on the Payroll Savings Plan.

BREVITY—Identify by IEN - 3720 if you write the maker

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY
Division Black Industries
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS *Write for information*

BREVITY—Identify by IEN - 3721 if you write the maker

5 BIG NEFF & FRY BINS

N & F Bins like these are being used for handling 80-odd kinds of flowable bulk materials. Besides grains, the principal ones are chemicals, chips, clay, coal, gravel, lime, ore, sand, sawdust, seeds, stone.

The distinctive feature of an N & F Bin is the diagonal-ended Super-Concrete Stave formed under 140 tons pressure. It has rocklike density and crushing strength.

It will pay you to get all the facts. Write, wire, or phone us.

THE NEFF & FRY CO. • 114 Elm Street Camden, Ohio

BREVITY—Identify by IEN - 3722 if you write the maker

WHY GUESS THE TEMPERATURE . . . when you can see it!

Accurate Temperature at a Glance with the Simplified PYRO OPTICAL PYROMETER

Any operator can quickly determine temperatures on minute spots, fast moving objects and smallest streams. Completely self-contained. No calibration charts or accessories needed. An accurate, direct reading Pyrometer that pays for itself by helping prevent spoilage. Weighs 3 lbs. Available in 5 temperature ranges, (1400°F to 7500°F). Ask for free Catalogue #160.

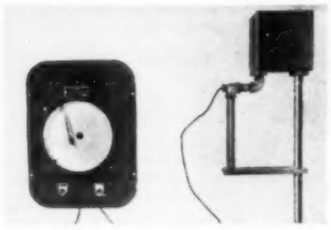
8 Instruments in One
The NEW Pyro Pyrometer Handles —

all surface temperature measuring jobs. Has 8 types of thermocouples; all interchangeable in seconds with no recalibration or adjustment. Automatic cold end compensator. Shock, moisture and dust proof. Accurate, big 4½" indicator. Available in 5 temperature ranges. Ask for FREE Catalogue #160.

THE PYROMETER INSTRUMENT COMPANY
New Plant and Laboratory
Bergenfield 21, New Jersey
Manufacturers of Pyro Optical, Radiation Immersion and Surface Pyrometers for over 25 years.

BREVITY—Identify by IEN - 3723 if you write the maker

For Quality Control of Viscosity . . . Use the NORCROSS RECORDING-CONTROLLING VISCOMETERS



Viscosity Range: 1 to 200,000 c.p.

Applicable to Textiles, Plastics, Paper, Synthetics, Adhesives, Food Products, Petroleum, Syrups, Paints, Resins, Printing and Soap.

NORCROSS RECORDING-CONTROLLING VISCOMETERS

Can Be Used For:
Recording or automatic control;
Operation under pressure or vacuum;
Explosion proof applications.

Give You:
Greater Production — Improved Quality
Labor Savings — Lower Costs

Write for illustrated booklet

NORCROSS CORPORATION
247A Newtonville Avenue, Newton 58, Mass.

BREVITY—Identify by IEN - 3724 if you write the maker

THE SIGN OF SECURITY

THE EAGLE LOCK COMPANY • • • TERRYVILLE, CONNECTICUT
Subsidiary of Russell, Inc.

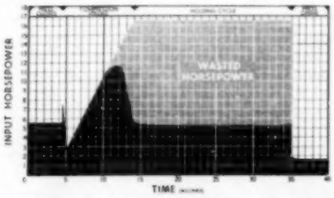
BREVITY—Identify by IEN - 3725 if you write the maker

PUT ALL OF THE OIL TO WORK

Simplify the Circuit and Improve Its Efficiency

Use RACINE Variable Volume Pumps; they automatically deliver only the exact volume required. Relief valves are eliminated. Heating is reduced, horsepower saved. Over-all cost of circuit components is less. These advantages are yours when you "put all of the oil to work."

The RACINE Line is complete. Pumps to 30 G.P.M. Pressure Boosters to 5000 P.S.I. Balanced piston sleeve-type 4-way valves, straight-way valves and controls, all designed for manual electric or hydraulic operation. Complete factory and field engineering service without cost. Write for Free, complete 3-color catalog P-10-D. RACINE TOOL & MACHINE CO., 1761 State Street, Racine, Wis.



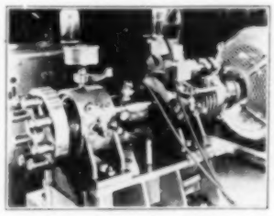
The black area in the chart above shows the H. P. consumed during one complete cycle of operation when a No. 6 RACINE Variable Volume Pump and 7:1 Pressure Booster is used. The red area shows the wasted additional H. P. required when an efficient 2-pressure, 2-volume Constant Volume Pump of equivalent size is used. Note the savings in H. P. Chart is based on the operation of a 200-ton molding press with a 10" ram.

RACINE
STANDARD FOR QUALITY AND PRECISION

BREVITY—Identify by IEN - 3727 if you write the maker

TESTING . . Torque measuring drive for tests on rotating equipment

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



Illustrated is a motor-drive assembly for centrifugal-pump testing in which a new application of the company's Baldwin SR-4 strain gage actuates electronic equipment to measure torque as a function of horsepower input.

The assembly consists of a pin-type coupling at the left-hand side, two base-plate-mounted bearings on the sides of a reduced section of the drive shaft where the strain gages are bonded at 45 deg. with the longitudinal axis. To the right of the right-hand bearing is an assembly of slip rings to bring the gage indication out for measuring. To the right of the slip rings is a 50-hp. driving motor.

The angular position of the strain gages causes them to respond to maximum strain resulting from applied torque. The gages are connected to form a Wheatstone bridge by which bending and thrust stresses are cancelled but torsional stresses are made cumulative. These stresses cause proportional bridge unbalance since the resistance of each gage changes in proportion to the strain imposed upon it. The company is prepared to consult with prospective users of this type of equipment to assist them in adapting it.

BREVITY—Identify by IEN - 3728 if you write the maker

PUMP . . Multi-stage centrifugal, 10 to 45 gpm. on heads to 400 feet

Source: DEMING CO.
184-88 Broadway, Salem, Ohio

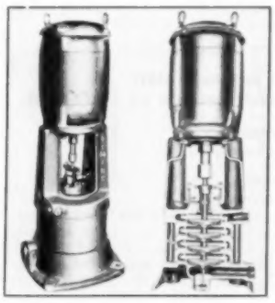


Figure 6606 is a new pump in the company's line of multiple-stage centrifugal equipment. It is available in 2, 3, 4 and 5-stage assembly with 1½-in. suction and 1-in. discharge. Each stage is a separate section. All stages are held together by through-bolts outside the water passages. The motor forms an integral part of the assembly. The motor bearing carries the small thrust load imposed.

Motor shaft and stainless-steel pump shaft are connected with a compression-sleeve coupling. A mechanical seal can be specified in place of the standard stuffing box packing. The pump is designed for services handling liquids that are non-corrosive to iron and bronze. Boiler feed where temperature does not exceed 250 deg. F. is a particularly good example. Overall height ranges from about 31 to 38 inches. Greatest distance across the base is about 14½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3729 if you write the maker

BUCKINGHAM... Thread RESTORERS

Just slip on, tighten and turn. That's all there is to it—it's that simple . . . and quick . . . And what *results!*

Flats and nicks are eliminated—even heavily rusted and corroded threads are cleaned pronto. No more drilling or hack sawing to restore damaged male threads—when you have a Buckingham Thread Cleaner handy.

Follows the pitch of any right or left hand thread—sizes range from ¼" to 4" root diameter. No need to insert or change dies. Cutting jaws adjust easily to proper size on the threads. See your nearest Buckingham dealer—or write.

6103 —	¼" to 1" root diam.	$ 6.50
6203*—	¼" to 1" root diam.	8.50
6104 —	1" to 2¼" root diam.	12.00
6106 —	2" to 4" root diam.	27.50
6204*—	1" to 2⅝" root diam.	21.00

*Short swing type.

BUCKINGHAM MANUFACTURING CO., INC.
49-51 Travis Street Binghamton, N. Y.

BREVITY—Identify by IEN - 3730 if you write the maker

There are more chips falling in industry today than ever before. They must be disposed of faster, reclaimed if valuable, and with less man power.

Spencer Vacuum, applied through a nozzle at the tool, or a hose in the bottom of an engine head, or tank, or a wide powerful floor tool not only picks up metals, but separates them from the dust. Gold, magnesium, solder and welding flux are a few of the materials being salvaged every day by Spencer machines.

There are more than 100 applications of Spencer Vacuum in industry, from conveying to large area cleaning and water pick up. Ask for Bulletin No. 144.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
439-C

BREVITY—Identify by IEN - 3731 if you write the maker

Milwaukee HOLE-SHOOTER
with exclusive split-body design

Its electrical parts can be inspected, cleaned and adjusted *while in operation*

NOW USED by LEADING INDUSTRIES for PRODUCTION and MAINTENANCE

In less than two years, the new "A" series of Milwaukee HOLE-SHOOTERS has been adopted as "standard equipment" by many of America's largest portable-tool users. Its acceptance for heavy-duty service is phenomenal. Wt. 3¼ to 4¼ lbs. Capacities and speeds: ¼" — 2000, 3500 and 5000 R.P.M.; 5/16" — 1600 R.P.M.; ⅜" — 650 R.P.M. Ball and roller bearings. Metco-built super-power motor, 115 V. AC or DC. Priced, $39.50 to $46.00. See your distributor or write us for Folder 115.

Milwaukee QUALITY TOOLS
MILWAUKEE ELECTRIC TOOL CORP., 5360 W. STATE ST., MILWAUKEE 8, WIS.

BREVITY—Identify by IEN - 3732 if you write the maker

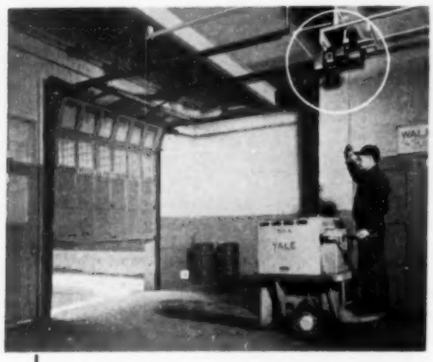
SO LOW IN COST you can use an INDIVIDUAL BENCHMASTER for every STAGE OF OPERATIONS

4 TON STANDARD MODEL
Other Models Available

Write for free circulars.

benchmaster PUNCH PRESSES AND MILLERS
2952 West Pico Boulevard, Los Angeles 6, California

BREVITY—Identify by IEN - 3733 if you write the maker



SAVE TIME and REDUCE EXPENSE

Material moves more quickly in the plant . . . delays for opening and closing doors are eliminated . . . expense of door maintenance is substantially reduced.

Barcol OVERdoors with Electric Operators

An improved overhead-type door with an Electric Door Operator designed and built to operate efficiently with long life and low maintenance. Call your Barber-Colman representative for full details.

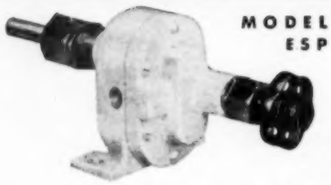
FACTORY TRAINED SALES & SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY, 114 Mill St., Rockford, Ill.

BREVITY—Identify by IEN - 3734 if you write the maker

ERTEL STAINLESS STEEL SELF-PRIMING PUMP

For pumping corrosive liquids, chemicals, drugs, cosmetics, foods, syrups, wines, whiskeys, pharmaceuticals, vinegar, etc.



MODEL ESP

★ Capacities 3, 5, 10, 20 and 30 gpm. Perfect alignment of the minimum of moving parts. Has manual by-pass control valve to easily regulate pressure and flow rate. Available as illustrated or as complete assembly direct drive or belt driven. Please ask for Pump Bulletin #34.

ERTEL SERVICE: We invite you to make use of our consultation service. Our engineering staff is always available to help in solving your Liquid Handling problems.

ERTEL ENGINEERING CORPORATION
KINGSTON NEW YORK
Representatives in Principal Cities

MANUFACTURERS OF HIGH GRADE ERTEL ASBESTOS FILTER SHEETS
ASBESTOS SHEET FILTERS • CYLINDER TYPE DISC FILTERS
PYROGEN FILTERS • VACUUM BOTTLE FILLERS • MIXERS • CAPPERS
CENTRIFUGAL AND SELF-PRIMING STAINLESS STEEL PUMPS

BREVITY—Identify by IEN - 3735 if you write the maker

MM INDUSTRIAL ENGINES

MODERATE SPEED
HEAVY-DUTY DESIGN

MM engines and power units are used in several sizes as original power installations for heavy and continuous service equipment. Standardization of many parts results in high production for finest quality, low cost per hp, and superior repair parts service. Design flexibility and standard SAE housings provide low-cost installations for any type of drive required.

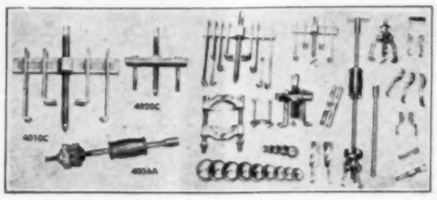
Have your shovels, trenchers, graders, hoists, crushers, pumps, generators, and drill rigs equipped with MM POWER.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 11, MINNESOTA

BREVITY—Identify by IEN - 3736 if you write the maker

PULLING . . Hand tool sets for use on vehicles, plant equipment

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.



Master No. 4000AB, to the right in the illustration, includes six basic pullers in heavy, medium, light, wheel, slide-hammer and bearing-separator types with 28 supplementary parts, all interchangeable.

Set No. 4010C is a heavy-duty design for both pushing and pulling. Set No. 4020C assembles two cap screws and a slotted crossarm for spread adjustment to 6 inches. Set 4056A is a slide-hammer unit with a short rod and two long narrow jaws. It is designed to remove clutch pilot bearings from flywheels. It handles bearings with bore from ⅝ to 1¾ inches.

BREVITY—Identify by IEN - 3737 if you write the maker

CLEANING . . Chemical solvent is alternate for carbon tetrachloride

Source: FINE ORGANICS INC.
211 E. 19th St., 1st Floor, New York 3, N. Y.

Lists at $8 in 5 gal. drum

Type FO-128 is a new clear water-white solvent with flash point on P-M closed cup at 140 deg. F. It applies in cleaning mechanical and electrical equipment. The solvent is moderately toxic and shows little effect on a worker's skin. Residue on drying is negligible. Packaging is in 5 and 53-gal. drums.

BREVITY—Identify by IEN - 3738 if you write the maker

GAGE . . Bourdon pressure unit for heavy duty service to 10,000 lb.

Source: MARSH INSTRUMENT CO.
3503 Howard St., Skokie, Ill.

The Bourdon tube in this new gage is welded into its socket and to the end piece to form the equivalent of one-piece construction known as Conoweld. The gage movement employs stainless steel and Monel Metal to work together in self-lubricating action. The sector is coined. Assembly is in a wrought-steel copper-clad case finished in corrosion-resistant satin-black enamel. The gage is particularly suited for heavy-duty pulsating pressure and extreme vibration as encountered in oil-field service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3739 if you write the maker

move!

SOAP
SAWDUST
ORE
FERTILIZER
CONCRETE
VEGETABLES
CHIPPED ICE
MEAT
WOOD CHIPS
CANDY
STEEL CHIPS
COAL
FACE POWDER

...and countless other "granulars" with CLEVELAND Type F Air Vibrators

Catalog No. 105 will give you further details

THE CLEVELAND VIBRATOR COMPANY
2745 Clinton Ave. · Cleveland 13, Ohio

BREVITY—Identify by IEN - 3740 if you write the maker

New! Low-Cost! Wide-Range! VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

BREVITY—Identify by IEN - 3741 if you write the maker

HERE AT LAST A Flame-resistant U. S. ROYALITE

A blow torch that develops tremendous heat is directed on a square of flame-resistant U. S. Royalite.

If you've been waiting for a flame-resistant plastic, it's here . . . it's *U. S. Royalite!* This great material makes possible countless new developments in design and construction, lets plastic fabricators do things never possible before.

Royalite is versatile, light in weight, and more efficient than the materials it replaces. This great thermoplastic can be sawed, sheared, sanded, punched, nailed, bolted, riveted, sewed and cemented. It can be formed on standard equipment with conventional techniques.

ROYALITE IS

- ★ Flame-resistant
- ★ Lightweight
- ★ Unbreakable, non-splintering
- ★ Non-warping, non-corrosive
- ★ Waterproof, stainproof
- ★ Not affected by oils, most acids, alkalies
- ★ Comes in different colors

U.S. Royalite
STANDARD OR FLAME RESISTANT

SEE NEXT PAGE FOR LIST OF U. S. ROYALITE FABRICATORS →

UNITED STATES RUBBER COMPANY
2638 North Pulaski Road, Chicago 39, Illinois

▼ BREVITY—Identify by IEN - 3743 If you write the maker ▼

ONLY SAFETY BELT HOOKS

have the patented binder bars — are rigidly mounted in double steel strips that hold hooks permanently in alignment, assuring uniform tension across the belt, maximum traction and long belt life. Moreover, these bars protect belts—lap over belt ends, prevent fraying, prevent hooks from pulling out. This better belt lacing comes in 5 sizes. It can be applied with any standard lacer or lacing machine, or, can be applied with an ordinary hammer by using the inexpensive Safety Tu-way Lacer.

Write for Circular

Safety BELT-LACER CO.
5394 N. Menard Ave.
Chicago 30, U. S. A.

▼ BREVITY—Identify by IEN - 3744 If you write the maker ▼

Thermoplastic

the sensation of the plastics field

After being subjected to this intense heat, flame-resistant U. S. Royalite has not sustained combustion.

U.S. Royalite

CONSULT THESE EXPERIENCED FABRICATORS OF ROYALITE

CALIFORNIA
Artisan Engineering & Mfg. Co., Inc., 5037 W. Jefferson Blvd., Los Angeles 16
Horace L. Blackman Co., 287 So. Robertson Blvd., Beverly Hills
Engineering Plastics Co., 1475 El Mirador Dr., Pasadena 3
National Plastics Industries, 425 Divisadero St., San Francisco
Snedlow Plastics Co., 5527 District Blvd., Los Angeles 22
Technical Reproductions, 5526 Cleon St., N. Hollywood

COLORADO
Pikes Peak Plastic, 5 W. Pacharras St., Colorado Springs
Plasticraft Co., 2806 N. Speer Blvd., Denver

CONNECTICUT
Colt's Mfg., Hartford 15

FLORIDA
Plastics Design & Mfg. Company, Box 61, Tallahassee

GEORGIA
Gladwin Plastics, 542 Courtland St., N.E., Atlanta

ILLINOIS
Arem Plastic, 1539 N. Throop St., Chicago 22
Associated Plastics Fabricators, 164 N. May St., Chicago 7
J. B. Carroll Company, Corner Carroll and Albany Avenues, Chicago
Cortland Industries, Inc., 4545 W. Cortland street, Chicago 39
Neo Products Co., 2534-38 S. Kedzie Ave., Chicago 23
O-Lin Products, 3755 Kedzie Avenue, Chicago 18
Preciden Plastic Products Inc., 628 W. Lake St., Chicago 6

INDIANA
General Plastics Corp., 1400 N. Washington, Marion

MARYLAND
Fawn Plastics Co., 2902 Hamilton Ave., Baltimore 14

MICHIGAN
Cadillac Plastic Co., 651 W. Baltimore, Detroit 2
Imperial Industries, 4425 Walker Ave., Wayne
Kline Mfg. Co., 50 Cottage Grove S.W., Grand Rapids 2
Reynolds Plastics, Inc., 7445 W. Forth St., Detroit
Fabri-Kal, 242 East Kalamazoo Avenue, Kalamazoo
Woodall Industries Inc., 7565 E. McNichols Rd., Detroit 34

MINNESOTA
T. O. Plastics, 58th & Longfellow, Minneapolis
Plastics, Inc., Chestnut & Ryan Sts., St. Paul 2

MISSOURI
Regal Plastics Co., 710 Main St., Kansas City

NEBRASKA
Omaha Plastics Co., 1470 S. 16th St., Omaha 9

NEW JERSEY
Hillcocks-Miller Co., 10 W. Parker Ave., Maplewood
Stokes Molded Products, Inc., Taylor St. at Webster, Trenton 4
Thermacote Co., 320 Jefferson St., Newark 5
Van Beek Industries, 23 Park St., Orange

NEW YORK
Bassett Molded Products, 1424 W. Farms Rd., New York 60
Corbell Inc., 1700 Elmwood Ave., Buffalo 7
Dual Fabricators Corp., 808 Driggs Ave., Brooklyn 11
Dura Plastics Inc., 1 W. 34th St., New York 1
Durable Formed Products, Inc., 329 Canal St., New York 13
Mastercraft Plastics Co., Inc., 95-32 150th St., Jamaica 4
Steiner Plastics Mfg. Co., 47-30 33rd St., Long Island City 1

OHIO
Fabri-Form Co., Box 56, Cambridge
The Balter Company, 15 E. 2nd Street, Cincinnati

PENNSYLVANIA
Halsen Mfg. Co., 5919 Webster St., Philadelphia
Lee Plastics, A and Lippincott St., Philadelphia 34
Pearson-Berlinghof, Inc., 19 North State Street, Newtown, Pennsylvania
The Bell Plastics Co., Inc., 600 Heinz Street, Pittsburgh 12

TENNESSEE
Plasti-Line, Inc., Jacksboro & Broadway, Knoxville 18

TEXAS
Plastic Engineering Co., 2101 69th St., Houston 11
Plastic Products of Texas, 3319 Love Field Dr., Dallas

WASHINGTON
K. B. Plastics, Inc., 1817 So. 1st St., Yakima
Moore Plastics Company, 1121 Westlake North, Seattle

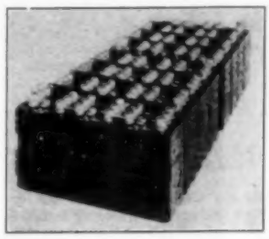
WISCONSIN
Midland Plastics Inc., 227 N. Water St., Milwaukee 2

The United States Rubber Company at 2638 North Pulaski Road, Chicago, Illinois, has complete Engineering, Designing, and Styling Departments to assist fabricators on the technique to employ, and in the art of fabricating most efficiently with ROYALITE.

▼ BREVITY—Identify by IEN - 3746 If you write the maker ▼

BATTERY . . Nickel cadmium design particularly for diesel starting

Source: NICKEL CADMIUM BATTERY CORP. 100 Park Ave., 31st Floor, New York 17, N. Y.



Type T is a new assembly in the company's line of nickel-cadmium alkaline storage batteries. One of two new types is available in a Model THR-30 with rating at 142 ampere hours. It is assembled in eight 6-cell trays and is interchangeable with a conventional 17-plate, 284-amp. hr. storage battery. The second is known as THR-44. It rates 210 amp. hr. and is interchangeable with a 25-plate, 426-amp. hr. conventional battery. Weights are 1,825 and 2,675 pounds. Nicad is the trade name.

The active materials, nickel hydroxide and cadmium oxide, are held in steel cells. Caustic potash, employed as the electrolyte, acts as a protector for the steel. The cell-plate assemblies are mounted in a welded-steel container. No sediment space is required or provided, since the plates prevent escape of the active materials and cannot buckle or swell. Overcharge will do no harm.

No noxious fumes are given off and the cells will not gas below 1.47 volts. A protective oil layer is recommended for application on top of the electrolyte to prevent evaporation and minimize water consumption. Service life of similar batteries has exceeded 25 years in utility applications. Installation can be made in existing battery racks.

▼ BREVITY—Identify by IEN - 3747 If you write the maker ▼

PUMP . . Submersible centrifugal lowers into 4 in. or larger well casing

Source: FAIRBANKS, MORSE & CO. 606 S. Michigan Ave., Chicago 5, Ill.

A driving motor with sealed rotor and starter, water lubricated and water cooled, forms the base portion of this new submersible pump assembly. An intake screen is located just above the motor and from this screen to the upper end of the pump assembly is an enclosure for multiple-stage centrifugal impellers. These impellers are mounted on a stainless-steel shaft supported in rubber bearings. At the top of the housing is a check valve. Delivery is through a 1-in. pipe that threads into the top of the pump housing.

Three models are included in the line, each with ratings at 20, 30 and 40 pounds. One model is intended for submersion at depth of 16 to 80 ft. with delivery capacity at 585 to 440 gpm. The next model is for depth from 100 to 120 ft. with delivery rating at 500 to 300 gpm. The third model is 140 to 160 ft. with delivery at 390 to 100 gpm. Electric leads are brought out beside the delivery pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3748 If you write the maker ▼

DAV-SON CORK-BACKED BULLETIN BOARDS

DAV-SON indoor and outdoor style Bulletin Boards provide attractive displays for up-to-the-minute announcements and posters. Your choice of hardwood or metal frames, with or without locking glass doors, illuminated or non-illuminated.

"THE SAFETY DIRECTOR"

Flashing display is a constant warning to employees to avoid accidents. Changeable letters permit timely safety messages to be set up as often as required. Definite improvement in safety records has been noted in plants using "The Safety Director."

Write for complete information regarding DAV-SON — Cork Bulletin Boards and Directories and the famous "Safety Director."

DAV-SON

Ask for Bulletin "A"

A. C. DAVENPORT & SON, INC.
ESTABLISHED 1932
311 N. DESPLAINES ST., CHICAGO 6, ILL.

▼ BREVITY—Identify by IEN - 3749 If you write the maker ▼

HERE'S half a ton of pull

...TOOL-BELT SIZE

THE NEW 1,000-LB. MIGHTY MIDGET PULLER

Combining easy portability with added pulling power, the new Coffing Mighty Midget does more jobs, does them *easier*. Only 9½ lb. in weight, it fits neatly in a tool box or hangs lightly on a tool belt. Full half-ton capacity gives it plenty of power for lifting and holding heavy dies and castings, unloading trucks — many other hoisting and pulling jobs. Convenient 2-way handle serves as a lever or high-speed crank.

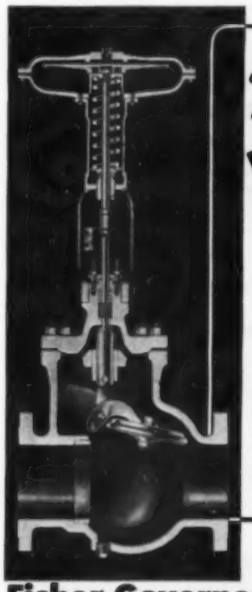
Equip your men with these new, stronger Mighty Midgets. See how their added strength and easy portability speed production and maintenance work throughout your plant. Write for Bulletin P4MP.

Only $31.00 ($21.75 for 500-lb. model)

COFFING HOIST COMPANY
DANVILLE, ILLINOIS

Quik-Lift Electric Hoists • Hoist-Alls • Safety-Pull Ratchet Lever Hoists • Spur-Geared Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys

▼ BREVITY—Identify by IEN - 3750 If you write the maker ▼



New FISHER METER-RUN SHUT OFF VALVE

Allows full rangeability of meter settings. Pneumatic top work, 2 to 15 PSI, operated from meter differential limit controller. Flapper valve lifts clear of the flow stream, providing minimum resistance. Pressure drop through valve equal to only 7 ft. of equivalent pipe. Positive shut-off assured. Iron or steel bodies, sizes 4" through 12".

WRITE FOR BULLETIN 57-TL

Fisher Governor Company
MARSHALLTOWN, IOWA

▼ BREVITY—Identify by IEN - 3751 If you write the maker ▼

Series 140-A-MH. Heavy Duty Structural Steel Double Roll Race Swivel Truck Caster with Roller Bearing Semi-Steel Wheels.

new CASTER SERIES
new STRENGTH
new USES

Bond heavy duty 40-A-MH Series Swivel Casters and their companion Rigid Casters (41-A-MH) are available in a greater range of wheel diameters —5", 6", 8" and 10". Both series are made of even thicknesses of heavy steel, uniformly shaped for extra strength and rigidity.

Write today for full information on the Bond 40-A-MH and 41-A-MH Heavy Duty Casters. Ask, too, for your copy of the Bond Catalog K-38.

BOND FOUNDRY & MACHINE CO.
MANHEIM, PENNA.

Bond®
built-for-the-job 40-A-MH and 41-A-MH Series Heavy Duty STRUCTURAL STEEL CASTERS

Series 141-A-MH. Heavy Duty Structural Steel Rigid Caster with Roller Bearing Semi-Steel Wheels. Companion caster to the 140-A-MH Swivel Caster.

BREVITY—Identify by IEN - 3752 if you write the maker

It's Here...a Great NEW APPLETON REELITE

Announcing the new, *all new*, Appleton 7S Portable Reelite—a compact, automatic cord take-up reel that furnishes light—or a flexible power source for electrical devices—when and where you want it.

Positive stop action holds cord at desired length; cord is automatically re-reeled when job is done. Installs easily on 4" octagonal outlet box. Available with six types of handlamp, machine tool connector body or key socket. Vaporproof model furnished complete with handlamp. Write for full details.

Sold Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1716 Wellington Avenue • Chicago 13, Illinois

APPLETON
CONDUIT FITTINGS · LIGHTING EQUIPMENT · OUTLET AND SWITCH BOXES
EXPLOSION PROOF FITTINGS · REELITES

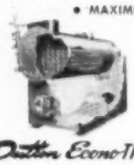
BREVITY—Identify by IEN - 3753 if you write the maker

REDUCE! YOUR STEAM COSTS!

WITH A Dutton "PACKAGED"

STEAM GENERATOR

• LONG LIFE • LOW OPERATING AND MAINTENANCE COST
• MAXIMUM EFFICIENCY SAFETY



Dutton Econo-THERM

A highly efficient horizontal return tube type, assembled in portable casing and ready for firing on arrival. Dutton improved shell design and double size full length, high bricked firebox, give faster steaming and longer steam carry-over with less fuel consumption. Burns oil, gas or coal with high efficiency—easily converted from one fuel to another. Available as a package unit with firing equipment, controls and mechanical draft with short stack.

Dutton Econo-MIST

Completely self-contained, automatically operated, 3-pass modified Scotch Internal Furnace type which gives twice the power in half the usual space. Features such as the Dutton Off-Center Firing and Rotary Combustion assure faster steam and more steam with less fuel consumption and greater safety. Burns gas or oil.

Let us help select the best type for you.

Write for catalog IE-451 on "Packaged" STEAM GENERATORS.

Dutton BOILER DIVISION
HARMAN-DUTTON COMPANY • KALAMAZOO, MICH.
Boiler Makers Since 1880

BREVITY—Identify by IEN - 3754 if you write the maker

Industrial CRANES

Industrial Double Girder Multiple Runway Cranes provide high hook lifts and long spans at lower cost.

Illustration shows 5 runway, 3 motor close headroom type—110 ft. span.

Write for 20 Page Fully Illustrated Catalog

Industrial CRANES

INDUSTRIAL EQUIPMENT CO.
321 NORTH ADA STREET · CHICAGO 7, ILLINOIS
Representatives in Principal Cities.

BREVITY—Identify by IEN - 3755 if you write the maker

METER . . Electric instrument to read current, resistance, voltage

Source: TRIPLETT ELECTRICAL INSTRUMENT CO.
11-15 Harmon Drive, Bluffton, Ohio

Model 666-RL is a new portable instrument assembled in a leather case for application without removal from the case. It is supplied with self-contained batteries, test leads and instructions. It employs one of the company's 3-in. Red Dot flush-mounted instruments with black and red dial markings on a white background. An enclosed molded selector switch is turned to set a desired reading. The switch retains contact alignment permanently.

Current range is to 10 amp. dc. Resistance is read in three ranges to 3,000, 300,000 and 3,000,000 ohms. A range of 0 to 5,000 volts is included for ac. and dc. circuits. Connections are made direct. An enclosed rectifier is precalibrated.

BREVITY—Identify by IEN - 3756 if you write the maker

REAMING . . Spiral tooth tools, high speed steel, for use in chuck

Source: TWENTIETH CENTURY MFG. CO.
3728 Montrose Ave., Chicago 18, Ill.

Lists at $100 in selected sets

New tools have been added to the company's line of chucking reamers with 7-deg. right or left-hand and 30-deg. left-hand spiral teeth. The line includes reamer sizes from $\frac{1}{16}$ to $1\frac{1}{2}$ in. in nominal diameter. List price ranges from $2 to $22.25. Flute length is $\frac{5}{8}$ in. on the smallest, $3\frac{1}{2}$ in. on the largest. Overall length ranges from $2\frac{3}{4}$ to $12\frac{1}{2}$ inches.

Each tool is available in a standard size plus an over-size or under-size dimension. Sets can be specified to include drills and matching reamers. One such set, known as No. 100, includes seven drills ranging from .118 to .492 in. and the corresponding reamers in nominal $\frac{1}{8}$ to $\frac{1}{2}$-in. diameter.

BREVITY—Identify by IEN - 3757 if you write the maker

MARKING . . Lever operated tool rolls impression into channel web

Source: M. E. CUNNINGHAM CO.
99 E. Carson St., Pittsburgh 19, Pa.

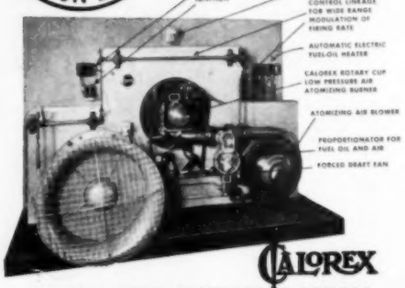
Channel-section work pieces are positioned on a roller-bearing slide on the base of this new marking tool and the marking head is turned into contact by operating a lever. The work moves forward as the head rolls over it to make the desired impression. Solid die faces or insert lettering can be specified. The base and slide are supplied to suit individual channel shapes. Type CM-50 is the designation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3758 if you write the maker

W. N. BEST COMBUSTION EQUIPMENT · CALOREX

INDUSTRIAL BURNERS



CALOREX

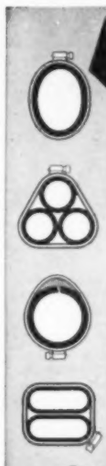
ROTO-CUP BURNER SYSTEM

W. N. BEST presents a packaged system for automatic firing of fuel oil or combination oil and gas for boilers producing 200 H.P. or over.

Write for specifications on your letterhead. Include operating capacity of your boiler.

W. N. BEST COMBUSTION EQUIPMENT CO., INC.
415 11th Street · CARLSTADT, NEW JERSEY

BREVITY—Identify by IEN - 3759 if you write the maker



Clamp Most Anything WITH "Aero-Seal" WORM-DRIVE CLAMPS

- Hold odd-shaped connections
- Hold multiple pipes or ducts
- Conforms to any shape
- No distortion—no crimping
- Vibration-proof . . . no parts to lose or loosen
- Use again and again
- Made in any length
- All stainless steel bands at no extra cost

ANOTHER BREEZE WARK PRODUCT

WRITE TODAY FOR FREE SAMPLE!

AERO-SEAL Worm Drive Never Works Loose

"Aero-Seal"® HOSE CLAMPS

BREEZE CORPORATIONS, INC.
32 South Sixth Street · Newark, N. J.

BREVITY—Identify by IEN - 3760 if you write the maker

MODERN PROBLEMS

get modern answers with DUREZ

Control Box Assembly Simplified . . .

TV rotating antenna control case was blueprinted by manufacturer with 8 tapped transformer mounting holes. Custom molder recommended low-cost general-purpose Durez for job, and provided a more durable, more rigid mounting with *four molded-in* screw posts. Lugs, bosses, and cut-outs are likewise molded in; hydraulic cylinders are used for coring. Results: simplified assembly, and a more serviceable product.

Phenolic Tap Changer Costs Less . . .

Here is a four-piece enclosed Durez transformer tap changer that superseded an open porcelain unit. The new product is safer, looks better, costs less to produce. The plastic is less subject to breakage, and its lighter weight is a further advantage. Precision fit of parts is due to accuracy of molds designed and made by the custom molder.

THOUSANDS OF PRODUCTS, big and little, are evidence of the versatility of the Durez phenolics in lending themselves to the needs of industry. Possessing an extraordinary range of desirable properties, these plastics are produced in more than three hundred different molding compounds. Durez field technicians are available to assist you in using them profitably. Durez can help you, too, in applying resins to your processes. To keep informed on new uses of phenolics, write on your office letterhead, for our monthly "Durez Plastics News." Durez Plastics & Chemicals, Inc., 1704 Walck Rd., N. Tonawanda, N.Y.

DUREZ *Phenolic Plastics that fit the job*

PHENOLIC RESINS — MOLDING COMPOUNDS · INDUSTRIAL RESINS · PROTECTIVE COATING RESINS

BREVITY—Identify by IEN - 3762 if you write the maker

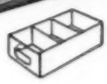
STURDY, CONVENIENT, LOW-COST

JIFFY ALL METAL CABINETS

16 DRAWER UNIT
(12" W x 7⅝" H x 6" D)
$7.95 POSTPAID

32 DRAWER UNIT
(12¾" W x 15¼" H x 6" D)
$12.95 POSTPAID

64 DRAWER UNIT
(25½" W x 15¼" H x 6" D)
$24.95 POSTPAID



RUSTPROOF ALUMINUM DRAWERS
Drawers 2¾" W x 6" L x 1¼" D
Dividers and Index Cards included.

FOR SMALL PARTS DRILLS TOOLS CARBIDE TIPS AND MOUNTED POINTS

Spot welded steel cabinet, metal flange drawer guides, enamel finish and solid one-piece aluminum drawers in natural satin finish. The first multiple drawer metal cabinet for convenient storage of small parts, drills, tools, carbide tips, mounted points or assembly bench work at such a low cost. Order now for immediate delivery. Send check or money order or rated companies shipped on receipt of purchase order.

THE CAMPRO SALES CO.
1300 Fourth St., S. W., Dept. L — Canton 2, Ohio
Dealer and Jobber Inquiries Invited

BREVITY—Identify by IEN - 3763 if you write the maker

ACME
. . . the Only
GAS MASK
with the
"PICTURE WINDOWS"

You never have that "jammed-in" feeling, wearing the Acme Full-Vision Gas Mask. Its patented, larger lenses are like picture windows, giving you full natural vision for that safe, unconfined feeling. When you walk, you can actually see your toes without bobbing your head. This factor alone makes Acme outstanding among gas masks . . . well worth looking into.

Write for the complete story on Acme Gas Masks for all occupational hazards.

ACME PROTECTION EQUIPMENT CO.
3037 West Lake Street, Chicago 12, Ill.

BREVITY—Identify by IEN - 3764 if you write the maker

For processing
For heating
For power

IRON FIREMAN STOKERS will cut firing costs

COAL-FLOW MODEL
No coal handling—coal flows directly from bunker to fire
Automatically fires economical stoker coal with complete reliability. Modulated fuel and air supply follows load automatically. No wasteful lag or runover. Feeds coal directly from bunker or bin—eliminates costly manual coal handling. Outstanding fuel economy. Unusually flexible to meet varying requirements.

Capacities up to 400 boiler horsepower

Capacities up to 1,000 boiler h.p. and more

PNEUMATIC SPREADER MODEL
Pipes coal direct to fire
Completely eliminates manual coal handling. Efficiently burns all grades of bituminous economy coals, including low ash fusion, sub-bituminous and lignite—ranging from ¼" to 2" top size. Thoroughly dries and preheats coal. This complete combustion system is readily adapted to any boiler room layout (even with bunkers on other floor levels).

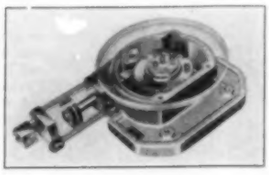
Write for full information and specification charts

IRON FIREMAN
3167 WEST 106TH STREET CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 3765 if you write the maker

INDEXING . . Rotary table, pneumatic pawl feed for machine uses

Source: A. K. ALLEN CO.
493-97 Wythe Ave., Brooklyn 11, N. Y.



Model 11EA and 11EB are new designs in the company's rotary tables previously described IEN-5963-47. A double-acting air cylinder, as shown in the phantom view, is chromium plated on the interior and fitted with neoprene piston cups to operate a rack that engages a gear and is backed up by two roller bearings in the table housing. The gear carries a pawl that engages teeth in an index plate beneath the table top. These teeth are spaced for a maximum number of 24 index movements to make 360 degrees. Baffles can be applied for 12, 8, 6 and 4 index movements in a complete circle.

Assembly is on a hardened center stud to carry the top plate and index plate. This stud rides in a bronze bearing at the top and an Oilite bearing at the bottom. The gear and its attached pawl operate about the stud on two needle bearings. The table will operate without over-ride with an inertia load not exceeding that of a 200-lb. plate 2 ft. in diameter or its equivalent placed on the table top.

The top plate measures 11 in. in diameter in standard construction and stands 3¾ in. above the base which measures 12 by 12 inches. The double-acting cylinder is 2¼ in. in diameter. It is equipped with a sleeve plunger at its rear end to actuate a valve also mounted at the end. On the side of the housing is a rod that extends through an Oilite bushing to move outward about ½ in. for actuation of valves or Micro switches to control secondary operations after the table has indexed. List price for the two models is $200 and $227. Additional baffle plates for 4, 6, 8 and 12 increments in a circle list at $3 each when they are specified.

BREVITY—Identify by IEN - 3766 if you write the maker

STROBOSCOPE . . To measure speed, basic range 600 to 14,400 cpm.

Source: ELECTRONIC MEASUREMENTS CO.
8-12 W. Front St., Red Bank, N. J.

Model-351A is a new portable light-flashing stroboscope with a basic speed range between 600 and 14,400 cycles or revolutions per minute. Operation is on 110-volt 50 or 60-cycle ac. The light is aimed at a unit of equipment and the flashing speed is adjusted by turning a dial until motion in the equipment has been "stopped." At this point the dial is read to indicate the speed.

Range can be extended to about 100,000 rpm. by using multiples of the flashing speeds. Operation below 600 rpm. is by checking multiple images. Accuracy is plus or minus 1 per cent of the dial reading above 900 rpm. when the instrument is standardized in terms of a frequency-controlled power line. Assembly is in a housing about 8 by 9 by 10 inches. Weight is 9½ pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3767 if you write the maker

POSITIVE GRIPS
THE **"HAMMER-LOCK"** *and* ***Electroline*** **FITTINGS**

The "Hammer-Lock" has long been a favorite grip of wrestlers. But just as popular, in Industry, is the Electroline Fitting . . . these safe, economical, permanent wire-rope connectors may be installed by unskilled labor in a matter of minutes with ordinary mechanic's tools.

Electroline Fittings slash re-roping costs—and prolong wire-rope life by damping vibration stresses and overcoming rope fatigue at entrance to the fitting. Send for catalog describing "positive-grip" Electroline Fittings!

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

BREVITY—Identify by IEN - 3768 if you write the maker

D-C power supplies for 10,000 to 1,000,000 volts and higher

Typical 65-kv power supply.

Manufacturers and developers of high-voltage equipment are invited to take advantage of General Electric's extensive experience in building power supplies for such diversified applications as:

Food Processing • Precipitation, separation and paint spraying • Nucleonics • Radar, radio and X-ray • Research and development laboratories.

Standard ratings range from 10 to 1000 kv with current ratings from 7.5 to 1000 ma. Higher ratings can be built to specifications. Inquiries should include any limiting dimensions and functional requirements such as voltage range, per cent accuracy, and allowable ripple. Address Room 43-328A, Apparatus Department, General Electric Company, Pittsfield, Mass. 43-90

GENERAL ELECTRIC

BREVITY—Identify by IEN - 3769 if you write the maker

10-ga. Hi-Tensile Gerrard Steel Strapping makes this pallet of motors a rigid unit. The Diagonal Tie cuts torsional sway to a minimum.

NO MORE WORRY
when you tie with
GERRARD STEEL STRAPPING

● You don't have to worry about "condition on arrival" when you tie your packages with Gerrard Steel Strapping. It clinches tightly, grips evenly, holds firmly despite rough handling, and keeps packages in first class condition.

You don't have to worry about the size, shape or weight of packages. Gerrard Steel Strapping is flexible enough to tie small cartons, yet strong enough to reinforce large crates, bind heavy pallets or secure bulky machinery to flat cars.

You don't have to worry about high strapping costs. Gerrard Steel Strapping costs about 40% less than any other type of metal reinforcement. And the Gerrard method of strapping effects other economies in plant operations. A Gerrard engineer will gladly give you the full story. His services are available free of charge. Write for a free copy of the *Blue Book of Packaging.*

Gerrard Steel Strapping Company,
4701 South Richmond Street, Chicago 32, Ill.

USS **GERRARD ROUND STEEL STRAPPING**
UNITED STATES STEEL

BREVITY—Identify by IEN - 3770 if you write the maker

YOUR PRODUCT CAN BE STILL BETTER . . . WITH A HACKNEY DEEP DRAWN *SHAPE*

This typical example of Hackney Deep Drawing is a liquid Freon receiver, 8" i.d. x 24" overall length. Note the two "bull's-eyes" covered with thick glass. Amount of liquid in receiver is easily ascertained from the exterior.

A deep drawn shape instead of a casting! Seamless construction instead of a welded part! These are ways Hackney parts can better your product. And you can expect such advantages as: decreased overall weight, greater strength, faster production, elimination of expensive machining operations, greater durability, improved appearance and lower costs.

Remember, Pressed Steel Tank Company specializes in cold drawing with almost 50 years' experience and a large assortment of tools offering customers unique advantages.

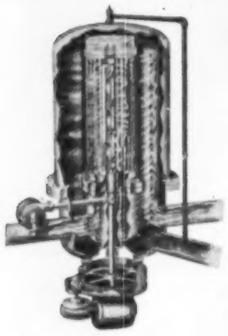
Write for full details

Hackney Pressed Steel Tank Company
Manufacturers of Hackney Products
1649 S. 66th St., Milwaukee 14 • 1322 Vanderbilt Concourse Bldg., New York 17
253 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St., N.W., Room 135, Atlanta 3
208 S. LaSalle St., Room 786, Chicago 4 • 577 Roosevelt Bldg., Los Angeles 14
CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

BREVITY—Identify by IEN - 3771 if you write the maker

Save Water Automatically

and save money, too!



Make dirty water *fit for use* or *re-use* with a Cuno FLO-KLEAN Strainer.

FLO-KLEAN makes dirty water suitable for many plant services . . . keeps recirculated water clean . . . *pays for itself in as short a time as a year.* Permanent, corrosion and abrasion-resistant cartridge positively removes all solids larger than spacing specified (from .0025 to .030 in.).

Continuously Self-Cleaning without Fluid Waste

FLO-KLEAN is cleaned automatically by unique system which does not waste backwash. No interruption of flow—exceptionally low pressure drop—completely automatic. For bulletin, address Cuno Engineering Corporation, 6911 South Vine Street, Meriden, Connecticut.

CUNO

Fluid Conditioning

Removes More Sizes of Solids from More Types of Fluids

NO FLUID IS BETTER THAN ITS FILTRATION

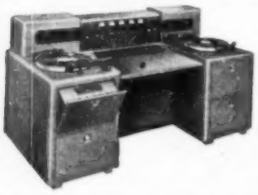
BREVITY—Identify by IEN - 3772 if you write the maker

*Coordination**

GREATER PROFITS WITH FLEXIFONE BUSINESS CONTROL!

* You can get coordinated action and immediate results in your business or plant operations with *FLEXIFONE!* Correlate instructions to all departments . . . get action instantly. Executive Messenger Boys cost money! Time saved is profit . . . keep every man on his job with *FLEXIFONE!* Man hours saved daily multiply into DAYS each month. *Send* a simple diagram of your operations. A factory trained specialist will advise without obligation.

PLANT PAGING—MUSIC DISTRIBUTION!



The DUKANE CENTRAL SOUND SYSTEM

. . . built to fit your needs. Installed and serviced by factory trained engineers.

FILL-IN, TEAR OUT, MAIL COUPON TODAY!

OPERADIO MFG. CO.
Dept. IEN-31—St. Charles, Illinois.

Without cost or obligation, please send further information on:

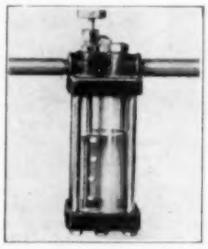
☐ FLEXIFONE BUSINESS CONTROL SYSTEM
☐ DUKANE CENTRAL SOUND SYSTEMS

Name_____
Address_____
City_____ Z___ State_____
☐ *Diagram of our operation is enclosed.*

BREVITY—Identify by IEN - 3774 if you write the maker

FLOW INDICATOR . . Bubbler unit indicates gas or air flow in a line

Source: KING ENGINEERING CORP.
Box 500-A, Ann Arbor, Mich.



Small flows of gas or air, from one bubble per second to approximately 40 cfh., can be set by adjusting a needle valve at the top of the housing of this new unit. Flow is indicated by the rising bubbles in the liquid contained in the transparent cylindrical housing which can be specified in glass or plastic depending on pressure requirements. Each unit is factory tested for operating pressure at 100 pounds. Overall height is 7¼ inches. The transparent cylinder is 2 in. in outside diameter. Threaded connections are for ¼-in. pipe.

The same unit can be employed as a sediment trap by omission of the needle valve, dip tube and filler plug to handle maximum flow of approximately 6 cfm. at 25-lb. differential pressure. A drain plug at the bottom of each unit permits removal of excess liquid built up by condensation of moisture.

BREVITY—Identify by IEN - 3775 if you write the maker

PAINTING . . Baking enamel for metal finishing is heat resistant

Source: UNITED LACQUER MFG. CORP.
1003 W. Elizabeth Ave., Linden, N. J.

Applies by spray or dip

Base Y-2323 is a new baking enamel, initially developed to finish metal ash trays. It is available for application on lamp shades, lamps, lighters, gas ranges. The enamel adheres to steel, aluminum, brass, chrome plate, gold, silver. It is non-yellowing and is resistant to attack by chemicals and solvents. A range of colors is included in the line in full gloss, semi-gloss and flat finish.

BREVITY—Identify by IEN - 3776 if you write the maker

TESTING . . Capacity bridge provides three condenser test ranges

Source: SIMPSON ELECTRIC CO.
5200 W. Kinzie St., Chicago 44, Ill.

Model 381 is a new capacity bridge with a patented circuit for three capacity ranges. These are 20 to 500 mmf., .005 to 2 mfd. and 1 to 500 mfd. The instrument measures 3⅝ by 2⅜ by 5½ inches. It weighs 1¾ pounds. Instructions are provided with each assembly. List price is $30.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3777 if you write the maker

WEIGER-WEED

ELECTRODE HOLDERS

Weiger-Weed Ejector Type Holders represent the closest approach ever made to an absolutely trouble-free resistance welding holder. Designed and built for the most severe conditions in resistance welding, they have proved themselves in thousands of hours of failure-free service. Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Ave., Detroit 4, Michigan.

Send for this free booklet of latest information on Resistance Welding

WEIGER-WEED

12802-D

Resistance Welding ELECTRODES
DIES • TIPS • WHEELS • HOLDERS

BREVITY—Identify by IEN - 3778 if you write the maker

New Arrival

TYPE "OS"

HYPREZ DIAMOND COMPOUNDS

Now **Two Types**

Available in 18-gram and 5-gram color-identified, dust-proof cartridges for use with the Hyprez Applicator Gun.

Developed and Shop-Tested for
Automatic Machine Lapping
Hole Sizing and Finishing
Tungsten-Carbide Finishing

Same quality, same grades, same prices as "W" compounds which remain the universal diamond abrasive for finer, faster finishing.

All Hyprez Diamond Compounds are formulated of accurately-graded diamond particles of lasting cutting power—evenly and permanently suspended in a scientific vehicle.

Write for free demonstration or complete description to Dept. E-451

HYPREZ DIVISION
ENGIS EQUIPMENT CO.
431 S. DEARBORN ST. CHICAGO 5, ILL.

BREVITY—Identify by IEN - 3779 if you write the maker

USE STRONG* STRAINERS -for *better* protection!

For steam, air, water and gas, STRONG'S new "Y" type strainer is ideal for the protection of steam traps, reducing valves, temperature controls, air control equipment, pumps, etc.

A HIGH-QUALITY, LOW-COST STRAINER!

★ **Monel Screen**—Mesh cloth in sizes ¼" to ⅜", larger sizes standard with .027 perforations. Self-centering guides prevent crushing.

★ **Semi-steel Body**—For rugged service. Sizes ¼" to 2". For steam pressures to 250 psi, cold pressures to 400 psi.

★ **Easy Installation**—New V-shaped gripping lugs on inlet and outlet bosses—may be easily installed with any type wrench.

CAST STEEL "Y" STRAINER

Available for pressures to 600 psi, screwed and flanged. Sizes ¼" to 4".

Send for Catalog 68-I today!

*Reg. Trade Mark

STRONG, CARLISLE & HAMMOND COMPANY
1392 West 3rd Street
Cleveland 13, Ohio

ALUM. METL Reg. Trade Mark

OTHER STRONG STEAM SPECIALTIES

No. 070 Small Trap — 80 Series Trap — "T" Type Strainer

STRONG

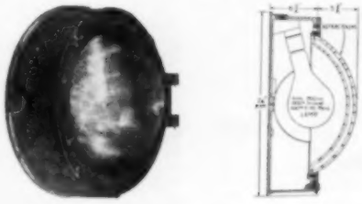
BREVITY—Identify by IEN - 3781 If you write the maker

BREVITY—Identify by IEN - 3782 If you write the maker

BREVITY—Identify by IEN - 3784 If you write the maker

LIGHTING . . Incandescent fixture mounts on wall for outdoor installation

Source: HOLOPHANE CO.
342 Madison Ave., Room 719, New York 17, N. Y.



Type U-850 is a new assembly in the company's Refractolens line of incandescent lighting fixtures. It takes 500, 750 or 1,000-watt incandescent lamps or the 400-watt E-H1 mercury lamp. Assembly can be flush in a wall or mounted on the wall surface. The cast housing is arranged for installation in poured concrete where three threaded holes in the back plate are provided to bolt it to a form prior to pouring.

The lamp is made of heat-resisting glass, smooth on both the inside and the outside. The prismatic reflecting surfaces are sealed in an air-tight chamber between inner and outer lens walls. Standard socket setting is for an angle of maximum candlepower at 65 deg. above vertical. Other angles can be furnished to specification. Horizontal light distribution is 180 deg. along the wall. Outside diameter is 26 inches. Housing depth is 6¾ inches. The lens projects 5¾ in. in front of the face plate which is hinged to the housing and held in place on a synthetic rubber gasket by captive Monel bolts.

Technical information with illustrations and sketches make helpful recommendation for outdoor lighting under given conditions and in given types of industrial plants. The information is contained in a 24-page booklet, "Outdoor Lighting."

BREVITY—Identify by IEN - 3785 If you write the maker

WATER TREATING . . Demineralizer has rating of 5 to 8 gallons per hour

Source: BARNSTEAD STILL & STERILIZER CO.
4 Lanesville Terrace, Boston 31, Mass.

A new meter to indicate water purity, and thus make a continual check on the flow of demineralized water from the company's Bantam demineralizer, has been added to the assembly previously described IEN-3784-49. The unit has capacity to remove about 1,200 grains of ionized salts from raw water before its cartridge element requires replacement. Thus with raw water containing 4 grains per gallon the capacity per cartridge is 275 gallons total.

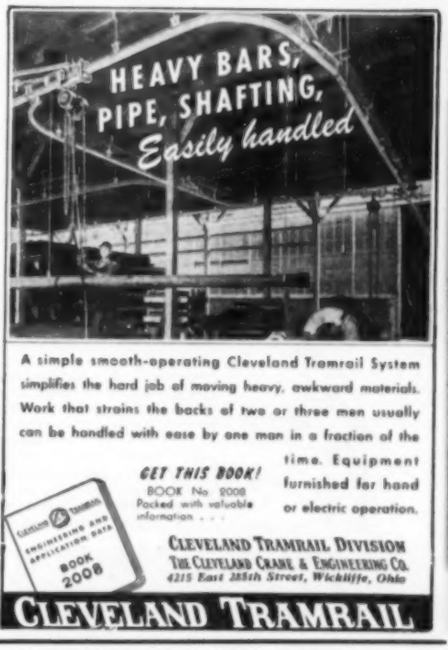
Cation resin in the cartridge converts the dissolved salts in incoming water to their corresponding acids. Anion resin, also in the cartridge, absorbs the acids to deliver mineral-free water in continuous flow from the cartridge top.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3786 If you write the maker

BREVITY—Identify by IEN - 3787 If you write the maker

BREVITY—Identify by IEN - 3788 If you write the maker



BREVITY—Identify by IEN - 3789 If you write the maker

BREVITY—Identify by IEN - 3790 if you write the maker

Perforated METALS and MATERIALS

No Job Too Small—None Too Large at H & K

CATERING TO THE NEEDS of every customer—large or small—has been the guiding principle at H & K ever since 1883. Your order may call for one sheet of special perforations . . . or it may be for several thousand in a standard pattern. Regardless of its size, H & K treats every order with equal attention, well knowing that proof of real success lies in the long and continued satisfaction of H & K customers.

FLEXIBLE FACILITIES
PROMPT SERVICE
LOW COST

H & K Perforated Metals . . . Stainless Steel, Steel, Monel, Brass, Everdur, Herculoy, etc.

H & K Perforated Materials . . . Plastics, Plywood, Rubber, Fabrikoids, etc.

H & K . . . your headquarters for screens, filters, strainers, grilles, etc. Write at once for complete information.

Also Remember H & K Grilles . . . for Beauty . . . for Utility . . . FOR LIFE!

The Harrington & King Perforating Co.
5637 FILLMORE ST. • CHICAGO 44, ILL.
114 LIBERTY ST. • NEW YORK 6, N. Y.

BREVITY—Identify by IEN - 3791 if you write the maker

Alnor Velometer

Gives instant, direct reading of Air Velocity —Anywhere!

Here is a precision-built, self-contained, portable instrument that gives instant, accurate reading of air velocities—anywhere. The Velometer is compact, portable—accurate in all ranges, from high to low. Needs no calculations or reference charts. Anyone can use it and get accurate measurements. Available in a wide range of scales, and with a wide assortment of jets and fittings if needed. You'll want full details and prices, so write for Bulletin No. 2448-G. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor

PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 3792 if you write the maker

New EASY METHOD KEEPS FLOORS CLEAN and BRIGHT LONGER

MULTI-CLEAN ANTI-SLIP WATERPROOF FLOOR WAX FOR ALL TYPES OF FLOORS

Easily applied to give you that attractive, long-lasting resilient finish you've always wanted. Requires only daily brushing or dust mopping—saves time and labor. Combines high resistance to abrasion with excellent anti-slip qualities.

FREE MAINTENANCE MANUALS EXPLAIN MULTI-CLEAN METHOD FOR EVERY FLOOR

Preparation and procedure varies with each kind of floor. For each type, Multi-Clean has prepared a handy maintenance manual that gives complete directions for floor care, to enable you to keep your floors looking their best with less work and at the least cost. Write today, describing the type of floor you are interested in—address Multi-Clean Products, Inc., Dept. 31E, St. Paul 1, Minn.

THIS TEAM MAKES *BETTER* FLOOR MAINTENANCE EASY

MULTI-CLEAN ALL-PURPOSE RUG AND FLOOR SCRUBBER
For every need in floor and rug scrubbing.

MULTI-CLEAN FLOOR MACHINE
For every type of floor work—scrubbing, waxing, polishing, shampooing, buffing, sanding, grinding, troweling, dry cleaning.

MULTI-CLEAN ELECTRIC MOPPER, WET-DRY VACUUM
For either wet or dry pickup without changeover. Attachments for all cleaning jobs.

MULTI-CLEAN
2277 Ford Pkwy. St. Paul 1, Minn.
Industrial Vacuums · Permanent Floor Finishes · Floor and Rug Machines · Custom Cleaning Chemicals

BREVITY—Identify by IEN - 3793 if you write the maker

TESTING . . C-frame instrument reads Rockwell and Brinell hardness

Source: AMES PRECISION MACHINE WORKS
129-33 Lexington St., Waltham 54, Mass.

Model 4 is a new unit in the company's line of portable hardness testers, previously described IEN-2346-49. It provides a larger opening than the Model 2 shown in the illustration. The new unit will test rounds and flats to 4 in., reading in Rockwell A, B and C scales. Brinell equivalent can be figured.

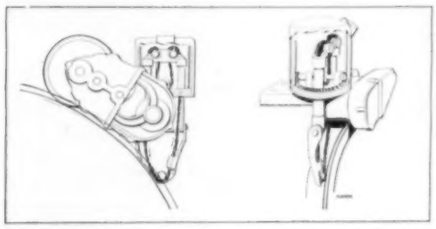
Equipment includes a diamond penetrator, a $\frac{1}{16}$-in. ball penetrator, a flat anvil, two V-anvils, an adapter and extension, two hard-steel test blocks, a brass test block, a case with a hinged cover and the Rockwell conversion chart. An additional Model 4-4 is the same as the Model 4 except that its throat depth is 4 in. as compared to the 3-in. throat in the Model 4.

The work applies between the anvil, to the left in the illustration, and the penetrator to the right. Pressure is built up by turning a handwheel at the back of the penetrator spindle until the indicator hand has turned on its dial to the required test designation. This turning movement accompanies spring in the tester frame caused by application of the pressure. The reading is then taken on one of the three dials on the penetrator spindle lying back of the magnifier lens.

BREVITY—Identify by IEN - 3794 if you write the maker

LUBRICATING . . Chain lubricator feeds graphited grease to wheel flange

Source: RAIL FLANGE LUBRICATOR CO.
2782-86 N. W. Thurman St., Portland 10, Ore.



Roller chain rides in a closed loop between a grease reservoir and a guide sprocket in this new lubricator. The sprocket holds it in position with the flange of a locomotive wheel. The chain is advanced by the action of a friction wheel and gearing, this mechanism also rotating an agitator inside the cylindrical housing containing the grease. The chain is about 3 ft. in length. It makes one complete cycle in about a mile.

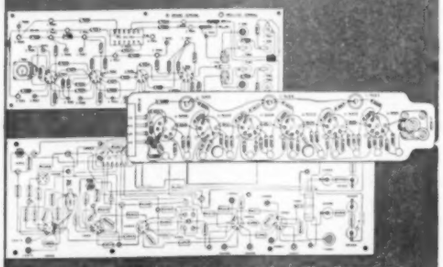
The grease deposited against the wheel flange is transferred to the inner curves of the rails and to the switch points to minimize wear and friction. The lubricator weighs 25 lbs., measures 13 by 11 by 15 inches. The reservoir holds sufficient grease for a run of 300 to 500 miles.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3795 if you write the maker

FORGET METAL SHORTAGES!

Give Your SCHEMATIC DIAGRAMS The Advantages of Plastics



It will pay you to fabricate your schematic diagrams in plastics. It's the best way to protect important instructions from soil and damage—superior to paper and more practical than metal.

Sillcocks-Miller engineers are specialists in this precision work and can develop and produce these diagrams to your exact specifications.

The SILLCOCKS-MILLER Company

Write for details and quotations.

27 W. Parker Ave., Maplewood N. J.

BREVITY—Identify by IEN - 3796 if you write the maker

REED ENGINEERING COMPANY — MODERN METALWORKING MACHINES

1009 W. Fairview — Carthage, Mo.

REED RD-20 PORTABLE TURNING ROLL

A TOP QUALITY, PRODUCTION LINE TURNING ROLL FOR WELDING, PAINTING, & FINISHING OPERATIONS ON TANKS & OTHER CYLINDRICAL SHAPES. HAS EASY-TO-ADJUST, REVERSIBLE VARIABLE SPEED RANGE FROM 0 to 120 IPM. PRICE INCLUDES MOTOR, CABLE, & "ON-OFF" FOOT SWITCH. REVERSIBLE FOOT SWITCH EXTRA.

CAPACITY:
LOAD—2000 LBS. MAX.
DIAMETER—3 IN. TO 6 FT.
LENGTH—1 FT. TO 12 FT.

WRITE FOR BULLETIN 70

BENDING ROLLS ★ WELDING POSITIONERS & ROLLS ★ OFFSET & CONTOUR FORMERS ★ ASSEMBLY FIXTURES

★ SPECIAL MACHINES & FIXTURES ★

BREVITY—Identify by IEN - 3797 if you write the maker

DON'T THROW AWAY DIRTY WORN WORK GLOVES!

"GLOVCO" RECONDITIONS THEM!

SAVE UP TO 49% ON COSTS!

Don't scrap canvas, leather palm or other gloves, pads, etc. We pick up your worn dirty gloves—wash, sterilize, mend, reshape, pair and return them to you at important savings.

Let us give you the complete story on this new national service.

U.S. INDUSTRIAL GLOVE CORP
9354 Roselawn Avenue,
Detroit 4, Michigan
Please send me complete details on your glove RECONDITIONING SERVICE.
Name_____
Address_____
City & State_____

U.S. INDUSTRIAL GLOVE CORP.
Representatives in all industrial areas.

BREVITY—Identify by IEN - 3799 if you write the maker

GOES A LONG WAY

to eliminate weld spatter cleanup

Unsightly costly weld spatter simply wipes off, in a matter of seconds, when you brush or spray Protect-O-Metal No. 2 in the weld seam on adjacent surfaces before welding. And you save up to 85% of weld cleaning labor, conserve man-hours for productive work.

Welders like Protect-O-Metal because it contains no organic materials, cannot cause smoke, fumes, or odors. *A little goes a long way* . . . costs 1/10¢ per foot of weld . . . saves up to three times its cost in time savings alone. Order a trial gallon ($5.25) on a no risk basis. If you're not completely satisfied we will cancel the invoice.

PROTECT-O-METAL

POM

G. W. SMITH & SONS, INC. GWSMITH 5404 Komp Rd., Dayton, O.

BREVITY—Identify by IEN - 3800 if you write the maker

it's here...

The NEW, REVOLUTIONARY Collapsible "PHIL-BOX"

Collapses from 28⅞" to 9 1/16" in Height

Sides are collapsed and placed in upright position ...in less than 20 seconds!

MODEL B 20

The new Phillips collapsible 2000 lb. capacity material handling "Phil-Box" is designed for saving space in storing and transporting bulk materials and parts. Quickly and easily collapsed or erected, the box interior measures 49" x 37" x 24". The "Phil-Box" has no pins or loose parts. Made of heavy gauge corrugated steel, it is of all welded construction—with smooth rolled edges for maximum safety. Can be stacked in collapsed or upright position. Fork lift or pallet truck can enter from all four sides for easy lifting.

Boxes stacked in collapsed position.

Boxes stacked in upright position.

Write for Bulletin E-14

MANUFACTURERS SINCE 1883 PHILLIPS (MINE & MILL SUPPLY COMPANY) PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2300 JANE STREET • PITTSBURGH 3, PA.

BREVITY—Identify by IEN - 3802 if you write the maker

WELDING . . Electronic timer for spot resistance welding machines

Source: WESTINGHOUSE ELECTRIC CORP. 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Air-cooled thyratron tubes make and break the welding current on a spot-welding machine when it is equipped with the company's new low-capacity synchronous or non-synchronous electronic control. The synchronous design can be supplied in rms. current rating to 50 amp. at a 10 per cent duty cycle. Non-synchronous assemblies are available in ratings to 100 amp. at 10 per cent duty cycle in operation.

The control provides for split-second timing of each operation. It maintains accurate control without interruption on continuous production lines to minimize welding rejects from the line. Components in the assembly are mounted on a swinging panel for inspection and servicing. The panel is enclosed in a standard NEMA Type-1 housing with gray enamel finish. Five assemblies in the line measure 14½ to 21 in. in housing width, 13½ to 17½ in. in overall distance front to back and 20 to 25½ in. in housing height.

BREVITY—Identify by IEN - 3803 if you write the maker

WOOD WORKING . . Radial arm machine, power feed, 12 to 18 in. saw blade

Source: DE WALT INC. 63 Fountain Ave., Lancaster, Pa.

Model GR-400 with a 2, 3 or 5-hp. motor for 12 or 14-in. circular saw blade and Model GE-400 with a 3 to 7½-hp. motor for 16 and 18-in. blade have been added to the company's line of radial-arm sawing machines.

Each machine mounts a special table top with a pressure arm, a spring hold-in and a spring-tension hold-down to operate with the motor-driven longitudinal feed that swings in or out of active position from the rear of the table. The operator starts the work to run molding or do shape cutting. The power feed takes over from there to pull the work through the cutting head and to remove it from operating position.

In addition to the Models GR-400 and GE-400 machines, the company can supply the longitudinal power feed without the specially designed table top in Model GR-350 and GE-350. Models GE-400 have tables measuring 28 in. in width by 44 in. in length for standard-arm machines and 34 by 48 in. for medium-arm machines. Corresponding dimensions for the Models BE-350 are 30 by 48 in. and 36 by 48 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3804 if you write the maker

GET YOUR SPECIAL-PURPOSE TUBES FROM W-J

TV • RADIO • ELECTRONIC SUPPLIES • WALKER-JIMIESON INC. CHICAGO

Headquarters for RCA

THYRATRONS
COLD-CATHODE
OSCILLOGRAPH TUBES
VACUUM & GAS RECTIFIERS
MONOSCOPES
PHOTOTUBES
IGNITRONS

Get ALL Your Electronic Supplies from "W-J"

Whatever you need in electronic parts or equipment, in any quantity, W-J will supply it to you FAST! Extensive stocks of special-purpose tubes, test instruments, resistors, capacitors, transformers, relays, tools, amplifiers, etc., always on hand. Trained supply experts, backed by years of procurement "know-how," fill and ship your orders accurately, quickly. Save yourself time, effort and money...make W-J your ONE supply source for everything in industrial electronics.

SEND FOR FREE CATALOG

Lists thousands of electronic item...Packed with handy, valuable procurement data. Send for your FREE copy NOW!

WALKER-JIMIESON, INC.
311 S. Western Ave., Chicago 12, CAnal 6-2525

ELECTRONIC SUPPLIES FOR ALL INDUSTRY

BREVITY—Identify by IEN - 3805 if you write the maker

IMPROVE YOUR PRODUCTS AT LOW COST

You can improve your products and equipment, give them corrosion resistance and minimize use of critical materials by designing your products around PERMACLAD. Get complete information today.

FREE
Write for a copy of this information packed folder—D-31.

For Better Products at Low Cost—Specify PERMACLAD

PERMACLAD STAINLESS CLAD STEEL

AW

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

125 Years of Iron and Steel Making Experience

Other Products:
A. W. ALGRIP Abrasive Floor Plate • A. W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

BREVITY—Identify by IEN - 3806 if you write the maker

FOR PRESSES, DATERS, AND MARKING MACHINES

FORCE BASE-LOCK TYPE

SET YOUR OWN TYPE ...IT LOCKS TIGHT!

Simply press type in base with finger tips. Special cast rubber prints on any surface.

Write for catalog D

WM. A. FORCE & COMPANY, INCORPORATED
64 WHITE STREET, NEW YORK CITY 13, N. Y.

THREE QUARTERS OF A CENTURY'S SERVICE

BREVITY—Identify by IEN - 3807 if you write the maker

ROAD BLOCKS? CLEAR DOCKS?

Save with a

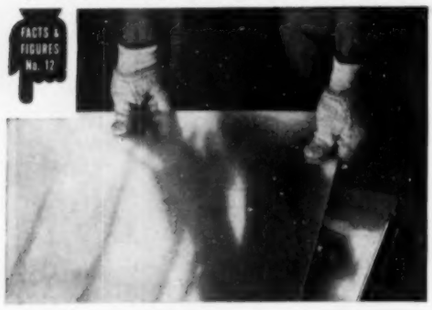
WHITING CROSS-OVER BRIDGE

You can save money—you can save time—and you can speed up materials movement from dock-to-dock with Whiting Cross-Over Bridges. Designed in three general types (Overhead-Rise—Ground-Level—and Roll-Away).

Pictured at the left, a Roll-Away Cross-Over Bridge ideally suited for a single span of track between building and platform dock. It is lowered approximately twelve inches and rolled under the dock when not in use.

Write for Bulletin MS-C-400 and learn how these practical Cross-Over Bridges fit your materials-movement requirements. Whiting Corporation, 15604 Lathrop Ave. Harvey, Illinois.

BREVITY—Identify by IEN - 3808 if you write the maker



JOMAC GLOVES

last 8 times as long as ordinary gloves in extensive tests with sheared steel

One of the country's largest electrical manufacturers* conducted extensive tests on Jomac Work Gloves and a different glove in a steel-shearing operation. The ordinary gloves wore out in six hours. The Jomac Gloves were still good after six 8-hour days. *Name on request.

Jomacs are
Washable • Reversible • Flexible • Heat-resistant
Protect against heat, cold, rough and sharp edges

C. WALKER JONES CO.
6135 N. Lambert Street, Philadelphia 38, Pa.

BREVITY—Identify by IEN - 3809 if you write the maker

Say "CHESTER" FOR DEPENDABLE CHAIN HOISTS!

..particularly when you need "Specials" fast!

In addition to a standard line of Spur Gear and Differential Hoists—from 1/4 to 25 tons—we can give fast service on Extended Hand Wheel types, Low Head Room Trolley Hoists, or other "Specials".

Send us your specifications. Or write for our complete catalog.

CHESTER HOIST DIVISION
The National Screw & Mfg. Co.
Lisbon, Ohio

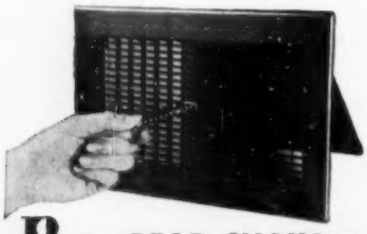
IEN-2

BREVITY—Identify by IEN - 3810 if you write the maker

No "Or Equal" for PULLS

BEAD CHAIN has long been the preferred pull chain among designers. For light duty on items like lamp sockets and fans, or heavy-load pulls on large dampers, ventilators, venetian blinds, etc., the superiorities of Bead Chain are many:—

It is strong yet light and attractive. Free-running, even over small sheaves . . . can't kink, bind or jam because every bead is a swivel. Highly adaptable . . . 5 bead sizes, various metals and finishes, and *the widest choice* of attachments for coupling, splicing, hooking, doubling, etc. Submit your "pull problem"—Bead Chain engineers will solve it.



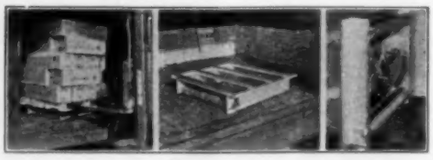
The BEAD CHAIN Mfg. Co.
TRADE MARK
59 Mountain Grove St., Bridgeport 5, Conn.

Manufacturers of: BEAD CHAIN—the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products; **MULTI-SWAGE**—the most economical method of producing small tubular metal parts for electronic and mechanical applications.

BREVITY—Identify by IEN - 3811 if you write the maker

TRUCKS . . Roller mounted dolly moves pallet load in car or motor truck

Source: PALLET ROLLER CO.
6430-34 Cass Ave., Detroit 2, Mich.



Steel deck measuring about 38 by 36 in. is mounted on two 4-in. diameter by 30-in. ball-bearing rollers in this new Pallet Roller dolly. A lock is lever operated to stop rotation or release it in one of the rollers so the dolly can be held on a floor or moved along.

The unit is designed to assist in loading and unloading box cars and motor-vehicle trucks and trailers by moving loaded pallets to far ends from the doorway or by acting as a support while a pallet is being loaded in a car and then moved to the doorway to be picked up by a fork truck for unloading.

Load capacity is 3,000 pounds. List price is $99.50. In addition to the plain unit, a second design is available in which a crank-operated jack and turntable assembly under the center permits lifting the dolly with its load and turning it for movement in a desired direction. This unit lists at $185. Overall height is 8½ in. in both designs.

BREVITY—Identify by IEN - 3812 if you write the maker

FIRST AID . . Automatic respirator delivers oxygen through cycling valve

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Oxygen is contained in a 21-cu. ft. cylinder in this new Pneolator equipment. It issues from the cylinder through a valve equipped with an adjusting handwheel and a cycling valve that converts predetermined positive pressure into intermittent positive pressure. The oxygen is delivered through a face piece to inflate the lungs to a predetermined point intermittently and to then cut off the pressure and permit exhalation by natural relaxing recoil of the chest and diaphragm.

Pressure can be regulated to suit individual requirements. A second patient can be given simultaneous treatment through an attachment. Weight of the equipment is about 47 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See our suggestions at the index, page 114

BREVITY—Identify by IEN - 3813 if you write the maker

Streamlined— AIN'T SHE?

. . . but rugged, very rugged . . . and she can be driven with a Motor, Turbine or V-Belt! Efficient, versatile and the price is lower than you would expect for a quality product of this kind.

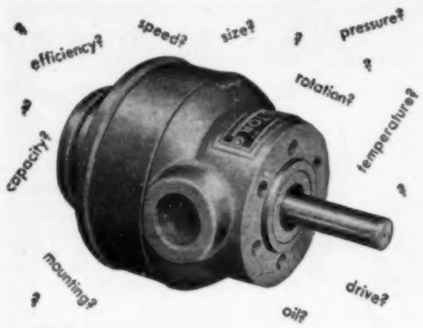
WRITE FOR BULLETIN 242 TODAY

SIZES: 1", 1½", 2", 3"
CAPACITIES: 5 to 450 G. P. M.
HEADS: 15 to 500 feet
MOTORS: 1750 and 3500 RPM, ¼ to 40 horsepower
MATERIALS: Standard, All Iron, All Bronze, or special to meet unusual requirements

IEN-5

WARREN PUMPS
WARREN STEAM PUMP COMPANY, INC.
66 Bridges Avenue, Warren, Massachusetts

BREVITY—Identify by IEN - 3814 if you write the maker



Know all the answers

. . . before you buy hydraulic pumps! A Gerotor check-list will help you to pin down your requirements . . . specify and buy more intelligently. Copies are yours for the asking . . . no obligation.

GEROTOR hydraulic PUMPS
GEROTOR MAY CORPORATION, Baltimore 3, Md.

BREVITY—Identify by IEN - 3815 if you write the maker

LOWER INSTALLATION COSTS
UP TO 50% SAVINGS ON MAINTENANCE
QUICKER HEAT
CLEANER PLANTS
LOWER FUEL BILLS

CYCLOTHERM STEAM GENERATORS

Factories, Public Buildings, Institutions all over America are finding out what the U. S. Navy discovered during the last war: CYCLOTHERM'S Cyclonic Combustion Steam Generators do a BETTER job, quicker and cheaper.

Proof of this statement and why it is true may be had by writing the Cyclotherm Corporation directly or check your phone book for your local Cyclotherm office.

Boilers designed for oil or gas. From 18 thru 500 h.p., 15 to 200 lbs. operating pressure.

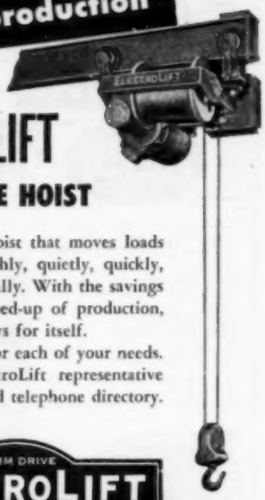
For further information, write Dept. J

CYCLOTHERM CORP., OSWEGO, N.Y.

BREVITY—Identify by IEN - 3817 if you write the maker

save handling—
speed production

with
ELECTROLIFT
WORM DRIVE HOIST



Here's a one-man hoist that moves loads up to 6 tons smoothly, quietly, quickly, safely and economically. With the savings in handling and speed-up of production, ElectroLift easily pays for itself.

There's a model for each of your needs. Just call your ElectroLift representative listed in the classified telephone directory. Or write to:

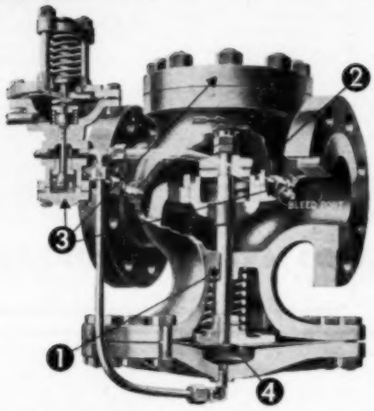
WORM DRIVE ELECTROLIFT HOISTS

ELECTROLIFT, INC., 30 Church Street, New York 7, N. Y.

BREVITY—Identify by IEN - 3818 if you write the maker

Here's Why SPENCE
REGULATORS

CUT COSTS . . .
REDUCE MAINTENANCE



Thousands of installations throughout the country have proved that Spence Pilot-Operated Regulators provide *dependable, trouble-free* pressure and temperature control year-in, year-out. Here are a few of the many Spence features that save you money . . . help keep *maintenance at a minimum.*

1. PACKLESS CONSTRUCTION of all Spence main valves and most pilots *eliminates the need for closely fitted parts* that may stick or bind due to uneven expansion or foreign matter.

2. DURABLE SECO METAL SEATS AND DISCS resist wiredrawing. More than 20 years of experience with SECO Metal *has failed to produce one case where it has been cut by steam.*

3. EASY TO CLEAN WITHOUT DISMANTLING — The seat and disc of the main valve and pilot can be cleaned and any working part removed *without taking the main valve out of the line.*

4. LONG-LIFE METAL DIAPHRAGMS, under usual conditions, never require replacement. The durable spring in the Spence Regulator operates at low unit stress . . . *out of the path of the steam* or other fluid flowing through the valve.

FREE BULLETIN NO. 4000 gives complete data . . . contains full color, fully illustrated description of the operating cycle of a Spence Regulator.

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

BREVITY—Identify by IEN - 3820 if you write the maker

PIPE FITTING . . Flange, connector, union for corrosion resistant service

Source: HORACE T. POTTS CO.
D St. & Erie Ave., Philadelphia 34, Pa.

Speedline trade names new line of pipe fittings in sizes from ½ to 4 inch. The line is available also for tubing measuring ½ to 4 in. in outside diameter. Each of the fittings can be used in Schedules 5S, 10S and 40S for corrosion-resistant service. Characteristics are economy due to the design, quick installation by rolling, soldering, brazing, welding for permanent tight assemblies.

The flange is made with a corrosion-resistant serrated insert in a carbon-steel outer flange with internal serrations in the insert designed for rolling in a pipe or tube. The aligning connector can be used to assembly heavy-wall Schedule-40S pipe and light-wall Schedule-5S pipe or tubing in the corresponding outside diameters. The union employs a hexagon nut made of carbon steel, aluminum or Monel Metal with the other parts in corrosion-resistant materials. Also in the line are tees, crosses, elbows.

Bulletin, "Speedline Fittings Book," 8 pages, presents illustrated data on each of the fittings in the new line.

BREVITY—Identify by IEN - 3821 if you write the maker

TESTING . . Oscilloscope for plant and laboratory application

Source: HICKOK ELECTRICAL INSTRUMENT CO.
10544-48 Dupont Ave., Cleveland, Ohio

Model 640 is a new 5-in. oscilloscope in the company's line of electronic test equipment in which the tube is marked off with a calibrated scale for quantitative measurements and comparisons. The tube itself is standard 5UP1 type with a medium-persistence screen on which high accelerating potentials provide intensity to view transient waves and high frequencies. A Type-5UP11 tube for short persistence or a Type-5UP7 tube for long persistence can be specified.

The instrument is stabilized so sweep lengths and synchronization are maintained as signal level varies. A combination light shield and camera base is provided to record traces. Assembly is in a portable steel housing that measures 14 by 11½ by 19 inches. Weight is about 35 pounds.

Frequency response is to 1,000,000 cycles in high position and to 4,500,000 cycles in low position. A recurrent and driven sweep provides a linear time base between 2 and 30,000 cycles. External capacities can be added for slower frequency sweeps of 10 sec. or less. An adjustable sweep provides for a 6X expansion or the equivalent of 30 in. of screen diameter. List price of the new instrument is $355.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3822 if you write the maker

WILSON MODEL TP-301
even cleans plugged tubes
does regular jobs faster

AT LESS COST

Wilson now brings you the fastest, most economical straight tube cleaner on the market. It is the only one which immediately removes deposits from completely plugged heat exchanger tubes. Model TP-301 is more powerful, lighter, only 15 lbs.—shorter, only 13" overall. It cleans tubes from ⅜" up to 2½" or even 3" O.D. It operates on air pressure as low as 50 lbs. Its low cost and adaptability will pay off in reduced "downtime."

THOMAS C. WILSON, INC. 21-11 44th Ave., Long Island City 1, N.Y.

WILSON
CABLE "TUBECLEAN" NEW YORK

WILSON TUBE CLEANERS
WILSON-DUDGEON TUBE EXPANDERS

BREVITY—Identify by IEN - 3823 if you write the maker

For the tough processing jobs . . .
CYCLONE
METAL CONVEYOR BELTS

● If your processing operations call for conveyor belts to operate through water, steam, heat, oils or chemicals, then yours is a job for Cyclone Metal Conveyor Belts. Immersion can't affect their operating reliability, making them especially adaptable for conveying materials and products in and out of liquid baths and sprays.

Available in three styles . . . Chain Link (shown), Flat Wire and Flex-Grid . . . and in a variety of sizes, metals and alloys, Cyclone Metal Conveyor Belts will save you money by speeding production, reducing labor costs and cutting maintenance.

For the full story on Cyclone Metal Conveyor Belts, write for Catalog No. 4, or ask the nearest Cyclone sales office for detailed information. You'll find offices in most principal cities.

CYCLONE FENCE DIVISION
(American Steel & Wire Company)
DEPT. C-41, WAUKEGAN, ILL.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS CYCLONE
METAL CONVEYOR BELTS
UNITED STATES STEEL

BREVITY—Identify by IEN - 3824 if you write the maker

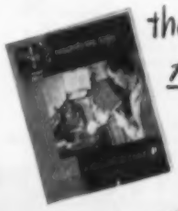
Here's your
trouble-shooter
for action too fast to see

Mechanical motion or fluid flow often hides trouble in a blur of speed too fast to see. With the Kodak High Speed Camera, you can take up to 3200 clear, sharp pictures a second—slow the motion 200 times for quick, accurate analysis.

The 16mm. film, shown at regular projection speed, can be studied over and over again—helps you take the guesswork out of design, production, and performance problems.

➡ High speed movies are now easier to take than ever when the Kodak High Speed Camera is fitted with the new Kodak Cine Ektar Lens, 25mm. *f*/1.9. With 2½ times the field angle of the standard 63mm. lens, it lets you get close to your subject and still have wide-sweeping action in the picture. And its extra speed simplifies illumination problems.

If you would like more information on how the Kodak High Speed Camera can save you time and money, improve product performance, and prevent future problems—just send for the booklet, "Magnifying Time." Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y.



the Kodak *High Speed* Camera

Kodak

BREVITY—Identify by IEN - 3826 if you write the maker

UNIVERSAL *Flexible* METAL HOSE

— Where to use it — How to select it
— Valuable engineering assistance

Here are two practical guides:

1. UNIVERSAL CATALOG #U-101

For simple applications of metal hose and tubing, rely on this catalog. It will save you time and help to simplify your choice. This quick-reference catalog contains specifications on every type of Universal Flexible Metal Hose, Tubing and Fittings. It lists typical applications—covers conveyance of solids, fluids and gases at low or elevated temperatures and pressures. Helpful cross-section illustrations for construction details. Send for your copy **today!**

2. UNIVERSAL ENGINEERING SERVICE

Universal is equipped to offer specific recommendations for your difficult metal hose requirements. Send complete information on your operating requirements. We'll send you our experienced recommendations.

UNIVERSAL *Flexible* METAL HOSE

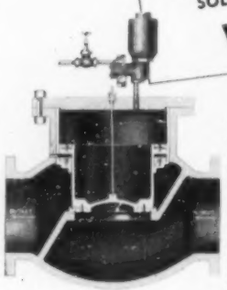
ANY TYPE — Square-Locked Flexible Tubing • Interlocked Flexible Hose • Hose Assemblies and Couplings
ANY METAL — Seamless Flexible Hose • Diesel Engine Exhaust Hose
ANY SIZE

UNIVERSAL METAL HOSE CO.
2131 South Kedzie Avenue Chicago 23, Ill.

BREVITY—Identify by IEN - 3827 if you write the maker

For dependable Trouble-Free Remote Control Operation

GOLDEN-ANDERSON *Cushioned* SOLENOID-OPERATED VALVES



FOR WATER, OIL OR LIQUIDS

These automatic valves provide full pipe line area when open, are drop tight when closed, permit adjustable closing speed, and are cushioned to prevent hammer or shock. Golden-Anderson electrically operated service valves have proven their greater efficiency and all-around dependability in many of the largest industrial plants of America.

Let our experienced engineers help you on your next pressure control problem. Technical data on request.

GOLDEN ANDERSON *Valve Specialty Company*
2079 KEENAN BUILDING • PITTSBURGH 22, PA.

BREVITY—Identify by IEN - 3828 if you write the maker

* chemical waste & slurries
* textile & dye wastes
* pulp and paper sludges
* oil separations
* lime putty & slurries
* distillation mashes
* sugar begasse
* gum & chickle slurries
* meat packing wastes
* fruit & acid wastes
* salt slurries
* industrial water reclamation and purification
* plant sanitation wastes

CARTER CARTER CARTER CARTER CARTER CARTER CARTER CARTER CARTER CARTER CARTER CARTER

CARTER Plunger Pumps

for better handling of your "problem" liquids

EMULSIFICATION
COAGULATION
AGITATION

Designed specifically for economical handling of solid-laden, viscous and mildly corrosive liquids—practically eliminating these 3 major pumping problems. Above are a few typical applications where Carter plunger pumps have been slashing costs for industry

* Gasoline or power-driven
* 2 GPM to 400 GPM—at varying pressures
* 16 sizes and types

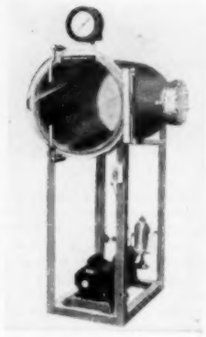
185 ATLANTIC ST.

R. B. CARTER SALES INC.
Hackensack, New Jersey

BREVITY—Identify by IEN - 3829 if you write the maker

TESTING . . Vacuum chamber to check high altitude components

Source: TENNEY ENGINEERING INC.
24-28 Avenue B, Newark 5, N. J.



Cylindrical chamber with inside dimensions of 19½ by 30 in., plus additional space provided by a drum head on one side, is served by a vacuum pump in this new assembly to produce an interior atmosphere equivalent to 60,000 ft. altitude. The chamber is covered with glass at the two ends. Its flanged circular door employs a sealing ring and latches for a vacuum-tight fit. A 1-in. utility port provides entrance for service leads.

The assembly is supplied, as shown, on a structural frame with the base-mounted pump. It is available also to mount on a table with pump installation on the floor. A gage reads vacuum. A regulating valve permits holding desired pressure.

BREVITY—Identify by IEN - 3830 if you write the maker

SLIP PROOFING . . Abrasive fluid adds to paint for concrete floors

Source: LOWEBCO INC.
1535 E. 53rd St., Dept. IE, Chicago 15, Ill.

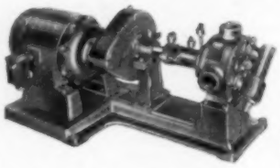
Lists at $10.95 per gallon

The surface of concrete floors can be treated to prevent slipping by painting them with a suitable oil-base, latex or rubber paint to which has been added a measure of the company's new abrasive fluid known as Adtex. The fluid does not change paint characteristics. Packaging is in quart and gallon containers. Mixing is in equal parts with the paint.

BREVITY—Identify by IEN - 3831 if you write the maker

PUMP . . Vane type rotary, enclosed design with enclosed motor

Source: VIKING PUMP CO.
49 Calvert St., Cedar Falls, Iowa



New Series, in enclosed design has been added to the company's line of rotary pumps. Four sizes have ratings at 20, 35, 50 and 92 gpm. They supplement a larger 200-gpm. size, previously developed. They are suited particularly for handling clean liquids and for use in locations indoors or exposed to the weather. The pump shaft is made of stainless steel. A relief valve can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3832 if you write the maker

REMOVES FUMES—DUST FASTER!

High Quality PRESSURE BLOWER

only $49.50
REG. PRICE $70.00

For the fast, efficient elimination of welding fumes, sawdust, or other air impurities, you can depend on this precision-made, all-aluminum high-pressure blower. Made with 5½" inlet and 3½" outlet. Enclosed ¼ H.P. Westinghouse single phase motor, 115 V., A. C., provides 3450 R.P.M. and up to 450 C.F.M. Immediate delivery! Ask for #BL50W.

STANDARD ELECTRIC MFG. CO., INC.
WEST BERLIN, N. J.

BREVITY—Identify by IEN - 3833 if you write the maker

EXTRA SAVINGS

Cooler-Cleaner MACHINE TOOLS AND WORK

FULFLO COOLANT PUMPS

Hard-to-get tools must be nursed like babies with production demands at all-time highs.

Keep 'em cool and turn out more and better work with proper coolants brought to the right spot by FULFLO COOLANT PUMPS.

Pipe sizes ⅜" to 1½". Motor, direct or belt drives.

WRITE NOW on your letterhead for your copy of FULFLO MECHANICAL DATA BOOK

An installation by American Electric Fusion Corporation

THE FULFLO Specialties Co., Inc.
BLANCHESTER, OHIO

BREVITY—Identify by IEN - 3834 if you write the maker

BARCO *Flexible* SWIVEL JOINTS

. . . to **SOLVE MANY PIPING PROBLEMS!**

FOR BETTER ENGINEERING! Put flexibility where you want it—without the nuisance of sagging, flopping, non-rigid lines. Easy to position lines for good drainage—no water pockets, better temperature control!

NO BINDING—LOW FRICTION, LOW TORQUE! Exclusive design provides 360° swivel action plus side flexibility to relieve binding. Excellent for slow speed* rotary joint applications up to 30 RPM.

LEAKPROOF! No leakage under varying conditions of vacuum or pressure, heat or cold.

SMALL, LIGHT, COMPACT! Sizes ⅛" to 2". Ask for engineering recommendations and latest literature.

**Ask about the new Type IB Revolving Joint for higher speed applications.*

BARCO MANUFACTURING CO.
1838 E Winnemac Ave., Chicago 40, Illinois
In Canada: The Holden Co., Ltd.

BREVITY—Identify by IEN - 3835 if you write the maker

REMEMBER THE PUMP YOU CAN FORGET!

A look at the record shows why we call the Kinney Heliquad Rotary Pump "the pump you can forget". A recent survey of 1685 Kinney Pumps (average age 9.2 years) showed an average annual cost for repairs of only 1.65% of the original cost. Materials pumped included all grades of products from abrasive crude oils to volatile gasolines, from black strap molasses to sea water.

When you're thinking about pumps, remember the Kinney Heliquad — with its highly efficient helical rotors driven by hardened steel timing gears. Write for Bulletin L48, the complete story on Kinney Rotary Pumps.

Kinney LIQUID PUMPS

KINNEY MANUFACTURING COMPANY
3564 Washington Street, Boston 30, Mass.
NEW YORK, CHICAGO, CLEVELAND, HOUSTON, NEW ORLEANS, PHILADELPHIA, LOS ANGELES, SAN FRANCISCO, SEATTLE, FOREIGN COUNTRIES.

BREVITY—Identify by IEN - 3836 if you write the maker

People *feel* better, *work* better when production areas have good ventilation. These ILG Self-Cooled Motor Propeller Fans draw in fresh air, circulate a breeze for a cooling effect, then exhaust the used air, heat and humidity. For help in solving *your* heat, humidity, or fume problems, phone nearby Branch Office (consult classified directory) or send inquiry card.

ILG ELECTRIC VENTILATING CO., CHICAGO 41, ILL.
2812 N. Crawford Ave. Offices in more than 40 Principal Cities

FREE! New 32-Page Bulletin No. 310

ILG VENTILATION for rapid air change

BREVITY—Identify by IEN - 3837 if you write the maker

He's watching a wedding of metal and plastic

IN this high vacuum coating chamber, metal evaporates from a heated crucible and condenses on molded plastic items or sheeting. Result: precious metal lustre at dime store price.

DPi not only supplies all the equipment you need for the process but works closely with manufacturers in selecting undercoating and overcoating lacquers and the best procedure for each particular production problem.

The high vacuum chambers used for metal deposition are available in a large variety of sizes from a simple 12-inch glass jar to a stainless steel chamber 4 feet in diameter and nearly 5 feet long, complete with versatile electrical connections and instrumentation.

We've prepared a new data sheet that gives full engineering details about DPi's line of high vacuum chambers. That and an article discussing the technique and economics of metal coating on plastics are yours for the asking. Write *Distillation Products Industries,* Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

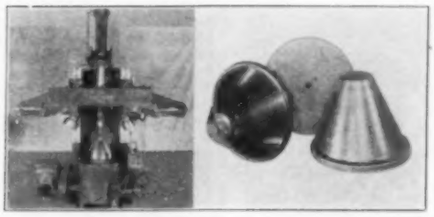
DPi **high vacuum research and engineering**

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 3839 if you write the maker

SPINNING . . Hydraulic feed machine makes stainless steel TV tube cones

Source: NORTHERN ENGINEERING & MACHINE CO.
Tioga & 2nd Sts., Philadelphia 40, Pa.



Flanged cones are produced from flat stainless-steel blanks in a range of greatest diameter between 16 and 24 in. in this new spinning machine. Production rate, based on 100 per cent duty cycle, is 75 per hr. for the 16-in. size. The machine measures approximately 9 by 7 by 10 ft. and weighs 10,000 pounds. It lists at about $20,500 with a chuck for one cone size.

The operator places a flat blank and locates it by previously perforated center holes on locating pins at the top of the chuck. Then he presses a button to start the cycle. The chuck is rotated continuously by the 20-hp. motor to the left of the housing. Hydraulic pressure is supplied by a pump and 7½ hp. motor on the right-hand side to move the cross rail down and to bring the two side idler rolls inward to provide the spinning action. When the cross rail reaches the bottom of its stroke, a cylinder at the rear moves a small rear roll inward to complete the cone flange. The operating cycle provides mechanical blank clamping, quick approach, feed, dwell, flange rolling, quick return, clamp release, and stripping from the chuck.

The side rolls are adjustable for angle. Controls are centered at a panel on the right hand side of the chuck. There is a selector switch for manual or automatic action, a cycle-start button, an emergency-return button and an indicator-light station for automatic position.

BREVITY—Identify by IEN - 3840 if you write the maker

TRUCK . . Two-wheel hand unit to handle Hum-Drum fibre containers

Source: THOMAS TRUCK & CASTER CO.
4733-37 Mississippi River, Keokuk, Iowa

One man is able to handle a 300-lb. filled Hum-Drum paper container loaded with bolts, washers or other types of small metal parts with this new two-wheel truck. It is designed particularly for the container with its short nose blade and its hinged hook arm. The frame is made of ⅝-in. pipe. The rubber-tired wheels are mounted on roller bearings.

The shipping container itself is a unit measuring 12 by 12 by 18 inches. It weighs 300 lbs. filled. Previously described IEN-10310-47, it is intended to replace wood kegs to handle fastenings and small metal parts.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3841 if you write the maker

TOUREK
BALL JOINTS • PIPE PLUGS
AND
QUALITY SCREW MACHINE PRODUCTS

Tourek's quality Ball Joints meet exacting requirements. Simplified design, improved performance, and lower costs result from specifying Tourek Ball Joints . . . the only recognized standard. Large stocks assure prompt delivery.

Tourek's precision countersunk steel pipe plugs are accurate, high strength, and economical—resulting in the highest quality at costs which are competitive to old style plugs.

Stock sizes, available with National Pipe or Dry-Seal threads are: ¼", ⅜", ½", ¾" and 1". Also available on special order in alloy steels, aluminum or brass in sizes up to 2⅝" diameter.

Modern high speed single and 6-spindle automatics—together with complete secondary equipment, including grinding and honing—plus 30 years' experience, assure you "The Best in Quality Screw Machine Products."

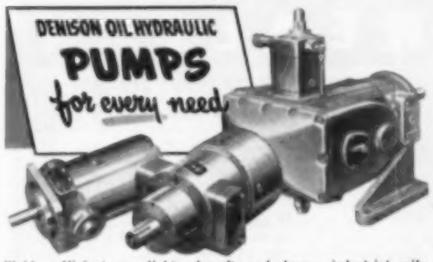
Your requirements, up to 2⅝", are made with utmost precision, and with prompt delivery guaranteed.

LITERATURE
Comprehensive data on any or all Tourek products sent promptly upon request—write for yours now. J. J. TOUREK MFG. CO. 4001 W. 16th St., Chicago 23, Ill.

TOUREK
"THE BEST IN QUALITY SCREW MACHINE PRODUCTS"

ESTABLISHED IN 1920

BREVITY—Identify by IEN - 3842 if you write the maker



Mighty efficient on light aircraft and heavy industrial oils

By actual tests, the exclusive axial-piston design of Denison HydrOILic Pumps provides volumetric efficiencies of *95 per cent or more* at operating pressures up to 5000 psi. Yet many of Denison's 5000 psi pumps cost less than others of lower capacity—extra value even for circuits using only a fraction of the pumps' full effort.

Users in every field have found that comparison quickly proves the many advantages of Denison HydrOILic Pumps. Write today for full details.

High pressure-high volume performance • For circuit requirements up to 5000 psi • Hydraulically balanced throughout—no thrust bearings • Compact, rugged simplified construction . . . fewer parts . . . longer life • Axial piston design for long, maintenance-free service • Stem, handwheel and compensator volume control • Volume delivery capacities up to 35 gpm • Constant and variable volume types • Face, flange or foot mounting.

DENISON HydrOILics **The DENISON Engineering Co.** 1151 Dublin Road, Columbus 16, Ohio

BREVITY—Identify by IEN - 3843 if you write the maker

BREVITY—Identify by IEN - 3844 if you write the maker

Amazing New ¾ Ton HOIST and PULLER!

BLACKBURN Jiffy Lift

30 DAY FREE TRIAL

Hundreds of Uses

Hoist weighs only 12 lbs., yet has ¾ ton capacity. Single control for up and down. Quick action, ratchet type. Factory-tested. $45.00, F.O.B. St. Louis. Try it a month FREE!

MAIL COUPON TODAY

JASPER BLACKBURN CORPORATION
35 Madison St., St. Louis 6, Mo.

☐ Send us full information about "Jiffy Lift".
☐ Send us one "Jiffy Lift" for 30 Day FREE TRIAL.

Your Name and Title _____
Firm _____
Address _____
City and State _____ IEN

BREVITY—Identify by IEN - 3845 If you write the maker

REALOCK

PROTECTION PLUS

All fittings, hinges and locking devices have bolts *on the inside*, secure from tampering.

Heavily galvanized by a special process, Realock Fence is weather-resistant, extra strong and durable...costs little or nothing for maintenance. Supplied only with malleable base with pressed steel arms (inset) in the East.

For complete details refer to Sweet's Catalog. For free estimate consult your classified telephone directory—or write direct.

REALOCK FENCE CF&I

WICKWIRE SPENCER STEEL DIVISION 361 Delaware Ave., Buffalo 2, N.Y.
THE COLORADO FUEL & IRON CORP. Continental Oil Bldg., Denver 2, Col.
THE CALIFORNIA WIRE CLOTH CORP. 1080 - 19th Avenue, Oakland 6, California
BRANCHES & DISTRIBUTORS IN KEY CITIES EVERYWHERE

BREVITY—Identify by IEN - 3846 If you write the maker

YOU need this new book on practical metal cleaning

SEE many interesting illustrations showing numerous industrial applications of VAPOR DEGREASING

READ information-packed pages that show you—

- How Vapor Degreasing saves time, cuts costs and boosts production.
- Where Vapor Degreasing is used profitably and economically.
- Which cleaning procedures and types of equipment are available for Vapor Degreasing.
- How Du Pont Technical Service can help you in the application of Vapor Degreasing.

DU PONT *non-flammable* **SOLVENTS for VAPOR DEGREASING**

SOLD NATIONALLY THROUGH DISTRIBUTORS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

SEND for your copy today!

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Delaware

Please send me my copy of **Vapor Degreasing with Du Pont nonflammable solvents.**

Name_____ Position_____
Street & No._____
Firm_____
City_____ State_____

BREVITY—Identify by IEN - 3848 If you write the maker

PRESS . . Air hydraulic unit, rating to 5½ ton, has 6 in. stroke

Source: AIR-HYDRAULICS INC.
809-13 Belden St., Jackson, Mich.

Model C-300 is a new bench-mounting press that connects to a shop air line supplying 100-lb. air to provide pressure capacity of 5½ ton on the downward movement and ½ ton on the return stroke. The stroke is adjustable between 4 and 6 in. by means of a stop. Speed can be set as required by turning a knob on the upper front head to throttle the flow of hydraulic fluid in the power cylinder. Throat dimension is 6¼ inches. Height from the table to the ram with the stroke up is 14½ inches.

The base measures 11 by 20¼ in. and has a 4-in. opening. The ram measures 1½ in. in diameter. Weight is 500 pounds. The company can supply a stand for floor mounting to make overall height 68 inches. Weight with stand is 625 pounds.

BREVITY—Identify by IEN - 3849 If you write the maker

SOLDERING . . Low tin materials employ silver to conserve tin content

Source: FEDERATED METALS DIVISION
120 Broadway, Room 1043, New York 5, N. Y.

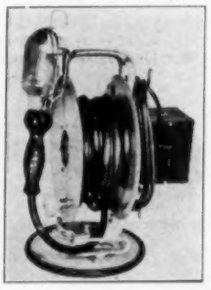
Saves 50 per cent of tin content

Type ST designates new line of silver-tin-lead alloys in which addition of the small percentage of silver permits major reduction in the tin content and, at the same time, provides a joint material equal to the original tin-lead alloy. The new solders are used without changing the fluxes. The same equipment is suitable, the only difference being a small additional amount of heat required to melt the Type-TS material.

BREVITY—Identify by IEN - 3850 If you write the maker

LIGHTING . . Portable reel assembly with transformer, for "safe" voltage

Source: ETRACO MFG. CO.
49 Woods Church Road, Flemington, N. J.



Saf-T-Lite is a new assembly of a standard make of electric cord reel to take 50 or 100 ft. of cord, a transformer with an extension cord and plug for connection to a 110-volt outlet, and a guard-equipped lamp holder. Current is reduced to 32 volts or less in the portion with which a worker may come in contact so there is no danger of electric shock.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3851 If you write the maker

USE Printed Tape

CODE—MARK—NUMBER

WITH

Topflight Tape

PRINTED PRESSURE-SENSITIVE — CHOICE OF COLORS

USE ROLLS IN STANDARD TAPE DISPENSERS

NO WATER OR GLUE NEEDED

EARLY DELIVERY
SOME ITEMS FROM STOCK

Write For Free Descriptive Literature

TOPFLIGHT TAPE CO.
YORK, PENNSYLVANIA — U. S. A.

BREVITY—Identify by IEN - 3852 If you write the maker

When problem nuts, bolts or screws must be turned, why waste time with screwdriver, wrench, cold chisel or hacksaw? Use a Porter IMPAKDRIVER and say GOODBYE to "ornery" screws, bolts or nuts that won't start . . . GOODBYE to hours spent trying to loosen or tighten fasteners in hard-to-get-at places.

Complete Sets with specially designed attachments including HEX sockets up to ⅝" and two sizes of Phillips and plain screwdriver bits. Ask your jobber (or mill supply house) for complete information.

H. K. PORTER, INC., SOMERVILLE 43, MASS.
PORTER-FERGUSON Auto Body and Fender Repair Tools
PORTER CUTTERS and PORTER PRUNERS

BREVITY—Identify by IEN - 3853 If you write the maker

PROVED IN PERFORMANCE

Grinnell-Saunders Valves with CHEMICALLY INERT KEL-F* DIAPHRAGMS

(Pat. App. For)

Grinnell-Saunders Diaphragm Valves with KEL-F Diaphragms are living up to every promise made for them. KEL-F's resistance to chemical action, low cold flow, wide range of temperature application and exceptional flex life have combined to make it the most important diaphragm development in years. Read what users are saying . . .

Typical performance reports . . .

1. Chlorine and HCl gas with small amounts of acetic acid and acetyl chloride at 302°F. for 900 hours. Very much superior to material it replaced.
2. Mixed aromatic and ketone solvents at 230°F. and 10 psi for three months. No sign of deterioration.
3. Chlorinated organic chemical at 158 to 194°F. and 30 to 40 psi for nine months. No failure, no shutdown, no replacement.
4. Chromyl chloride at ambient temperature and 15 psi. Diaphragm condition good at end of thirty days' test.

Complete information sent on request.

**KEL-F is the registered trade name for polytrifluorochlorethylene, an exceptionally stable thermoplastic produced by M. W. Kellogg Co.*

GRINNELL

WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Providence 1, R. I.
Branch offices in principal cities.

▼ BREVITY—Identify by IEN - 3855 if you write the maker ▼

See for yourself how you can SAVE TIME and MONEY with CORBIN Self-Tightening HOSE CLAMPS

If hose connections are vital to your product or process, you can save time and money with Corbin Hose Clamps! They are *installed in seconds to hold tightly for years!* Simply squeeze the ends of the clamp with pliers, slip the clamp over the connection, release your grip — and *instantly* you have a uniform, lasting seal!

SAMPLES AND SPECIFICATIONS

Write today for detailed specifications and for samples of Corbin Self-Tightening Hose Clamps in the sizes that fit your needs. See for yourself how efficiently these low-cost, time-saving clamps meet every hose connection need! There is no obligation, of course. Write to:

Corbin Hose Clamps fit hoses in sizes from ⅜" O.D. through 2⅝" O.D. They are made of heat-treated steel, treated to protect against rust and corrosion. They are used for rubber, fabric and plastic hose — to convey air, gases or liquids.

CORBIN HOSE CLAMP DIVISION
THE AMERICAN HARDWARE CORPORATION
New Britain, Connecticut

▼ BREVITY—Identify by IEN - 3856 if you write the maker ▼

Amazing ALEMITE OIL-MIST

AUTOMATIC LUBRICATION SYSTEM

Revolutionizes Machinery Lubrication

Unbelievably simple system atomizes oil into mist, distributes it through tubing to bearings. Bathes all bearing surfaces with fresh, clean, cool oil film. Uniformly maintains oil film on all sliding, rubbing, rolling parts regardless of variations in load, temperature or speed! No "peaks and valleys" of lubrication.

Fully automatic—eliminates waste and the uncertainties of the "human element." Extends bearing life as much as 17½ times. Seals bearings against dirt and abrasives. Cuts oil consumption as much as 90%. Greatly reduces the number of oils needed.

Desk-Top Demonstration, No obligation

A note on your Company letterhead will bring a trained Alemite Lubrication Representative to your offices. In a brief yet thorough Desk-Top Demonstration, he will tell you how Alemite Oil-Mist can provide more positive lubrication at lower cost than you ever thought possible. Write Alemite Division of Stewart-Warner, Dept. K-41, 1850 Diversey Parkway, Chicago 14, Illinois

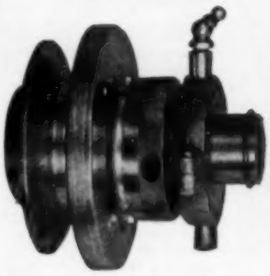
Stewart-Warner STEWART WARNER

Alemite OIL-MIST Automatic Lubrication System

▼ BREVITY—Identify by IEN - 3858 if you write the maker ▼

DRIVE . . Disc type clutches for V-belt sprocket and shaft coupling

Source: EDGEMONT MACHINE CO.
2202 Home Ave., Dayton 1, Ohio



Series K designates new line of disc-type friction clutches for stub or through shaft mounting to apply on gasoline engines or electric motors, speed reducers and auxiliary shafts ranging from ⅝ to 1 in. in stock bore diameter.

Type K, shown in the illustration, mounts a V-belt sheave in single or double-groove design to ride free on an Oilite bushing as long as the clutch is disengaged. A friction surface in the flange at the center of the assembly provides the driving connection when the shifter at the right-hand end is moved to engaged position. The V-belt sheaves measures 3⅝ or 3¾ in. in outside diameter.

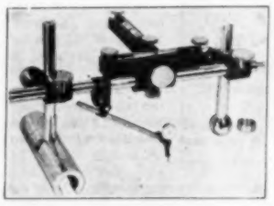
Type KS replaces the sheave with provision to drive a plate-type sprocket, normally supplied by the user. In this case there are two friction surfaces, one on each side of the sprocket to be engaged or disengaged by the shift action.

Type KE applies a friction disc mounted in a spider on an output driving hub for clutch engagement between two discs on the clutch drive unit when the shifter is operated. Each clutch is manually operated, engaging and disengaging with light pressure on the shifter and picking up the load without grabbing. Each clutch locks positively in engaged position. A threaded-steel adjustment provides setting to compensate for friction surface wear.

▼ BREVITY—Identify by IEN - 3859 if you write the maker ▼

GAGE . . Aligning instrument to set up machine tools and check ways

Source: GEORGE SCHERR CO.
202 Lafayette St., New York 12, N. Y.



Tumico King-Way is a new alignment instrument in which a slotted cylindrical guide and a ball foot support a horizontal connecting bar that mounts a dial indicator and a bubble level reading in two right-angle positions. The assembly can be adjusted to stand between flat and V-ways on a machine tool. The cylindrical guide can be set to ride vertically downward, at an angle, or vertically upward with reference to the slot to apply on, under or between ways of various designs.

The assembly can be slid along the ways to take readings in various positions. The dial indicator can be set to read on top of or underneath the way faces. The company has prepared a suggestion sheet showing various arrangements for application in set-up and checking. A copy is available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3860 if you write the maker ▼

INDUSTRIAL TRUCKS . . . how to tell when they are

Busy?
Idle?
Lifting?
Engine Running?

PUT ON **Servis Recorders**

A couple of screws or bolts does the job. Then the truck *itself writes its own story!*

THE CHART

Wax covered, no ink or pencil needed; a sapphire stylus marks the record—a picture of the day's work at a glance.

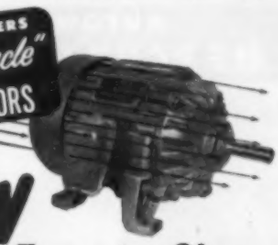
SERVIS RECORDER—closed. Just bolted on—no connection with any moving part.

Write for Bulletin IT

THE SERVICE RECORDER COMPANY
1375 Euclid Avenue • Cleveland 15, Ohio

▼ BREVITY—Identify by IEN - 3861 if you write the maker ▼

ALLIS-CHALMERS "Safety-Circle" TEFC MOTORS



NEW Easy to Clean Resists Corrosion

WORKING PARTS ARE ENCLOSED in rigid cast iron frame for strength and corrosion resistance. Dirt catching pockets in the cooling system are eliminated. Cleaning is easier and faster and is required less frequently — just blow off the dirt with an air hose.

Bearings are lubricated at the factory and operate without attention or cost for years. Call your nearest Allis-Chalmers Authorized Dealer or Sales Office for complete information or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletin 51B6144. A-3231

Safety Circle is an Allis-Chalmers trademark.

ALLIS-CHALMERS

▼ BREVITY—Identify by IEN - 3862 if you write the maker ▼

SPROUT WALDRON MUNCY, PENNSYLVANIA

CRUSHERS

for SOFT · PRESSURE SENSITIVE TOUGH · FRIABLE · CRYSTALLINE FIBROUS MATERIALS

157

Sprout-Waldron Crushers are used as preliminary units in a great variety of processing plants, particularly where the reduction from lump size to the final degree of fineness cannot be accomplished economically in a single operation. In addition to standard units, S/W Crushers are built to suit individual requirements. Write today for literature. Sprout-Waldron & Co., Inc. 30 Waldron St., Muncy, Penna.

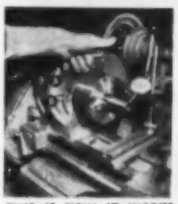
Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

▼ BREVITY—Identify by IEN - 3863 if you write the maker ▼

Buck AJUST-THU CHUCKS

HANDLES MORE JOBS THAN ANY OTHER CHUCK!



THIS IS HOW IT WORKS
Pinion "A" moves jaws in or out to grip work like any scroll chuck. 4 opposed screws "B" (only 2 shown) bring work to dead center. It's as easy as it sounds. Inexperienced men can center work within .0005 in 3 minutes! Once set dead true, you can machine hundreds of duplicate parts without changing adjustment!

1. .0005 precision with scroll chuck rechucking speed.
2. Handle Collet and step-collet work.
3. End most stub arbor mandrel seeds.
4. Adapt to dividing heads, grinders, screw machines, lathes.
5. Minimum overhang—grips work closer to spindle for greater accuracy.

THIS is the most amazing chuck advance in 50 years! One Buck chuck—*at ordinary scroll chuck cost*—will handle the work of special equipment worth $250 or more! Take collet work for example. Buck chucks have spindle capacity by .001 from ⅛" to 1½". 8" chucks have step collet capacity—by .001—from ⅛" to 5". That's *part* of the story. Send for all of it.

BUCK TOOL CO.
416 SCHIPPERS LANE
KALAMAZOO, MICH.

3 STEP-JAW CHUCK · 6 STEP-JAW COLLET CHUCK · 6 JAW PRODUCTION COLLET CHUCK

BREVITY—Identify by IEN - 3864 if you write the maker

AUTOMATIC MERCURY CLUTCH

Improves Product Performance . . .

. . . for

Air Conditioning
Aircraft
Blowers
Centrifuges
Compressors
Concrete Machinery
Conveyors
Cream Separators
Door Operators
Dry Cleaners
Electrical Appliances
Elevators
Extractors
Farm Machinery
Industrial Equipment
Lawn Mowers
Marine Drives
Materials Handling
Mixers
Motor Generators
Packing Machinery
Paper Machinery
Power Saws
Printing Machinery
Pumps
Refrigeration
Stokers
Textile Machinery
Washing Machines

If your product is powered by an electric motor or gasoline motor, find out today about Mercury Automatic Clutches. Performance-tested for years on thousands of installations.

Ask for Bulletin C-4

Mercury Clutch Division
AUTOMATIC STEEL PRODUCTS, INC.
CANTON 6, OHIO

BREVITY—Identify by IEN - 3865 if you write the maker

BETTER LIGHT for Machine Tools, Assembly and Inspection Benches

LOCALITES

The Finest of All Localized Lighting Units

MODEL 099-PX-412
Overall length 55½". Three instantly adjustable joints. Reflector accommodates 100 watt A-21 medium screw base lamp.

$13.28 EACH in pkg. of 4
Single Units $16.00 ea.

- **All Wiring Fully Enclosed** — completely protected from wear or insulation damage from oils and fumes
- **Adjusta-tension Joints** — tension easily adjusted for freedom of arm movement to suit worker and job
- **Universal Base** — mounts on outlet box or directly on machine or bench
- **Baked Enamel Finish**—exterior, Vista Green—Reflector interior, high temperature White

WRITE FOR COMPLETE CATALOG of Localized models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO
Localites are available through selected distributors everywhere.

LOCALITE fostoria for Light ON the Job

BREVITY—Identify by IEN - 3866 if you write the maker

MAUSER "THE ORIGINAL"

MAUSER-PRECISION VERNIER CALIPER

$14.75 POSTPAID

3 GRADUATIONS
1/1000" - 1/128"
1/10 Millimeter in back

FOR MEASURING INSIDE, OUTSIDE AND DEPTH!!
THE MOST POPULAR MEASURING TOOL IN AMERICA...
USED BY THOUSANDS OF MECHANICS DAILY!

REQUEST ILLUSTRATED CATALOG OR SEND YOUR ORDER TODAY!

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST • N.Y. 12, N.Y.

BREVITY—Identify by IEN - 3867 if you write the maker

MELTING . . Electric solder pot, three models, 900 to 1200 deg. F.

Source: DEE ELECTRIC CO.
1103 N. Paulina St., Chicago 22, Ill.

Formex insulated wire can be tinned without stripping the insulation by dipping the insulated end into melted solder held in the company's new Model No. 11 electric melting pot. Wires insulated with nylon and other low-melting-point plastics can be tinned in the same manner in a Model No. 12, which attains a maximum temperature of 1000 deg. F. Lower temperature, to a maximum of 900 deg. F., is provided by a Model 31. All three are the same size with crucibles measuring 2 in. in diameter by 2 in. in depth inside. Outside housing diameter is 5 in. and height is 5¼ inches. Four leveling screws are in the base.

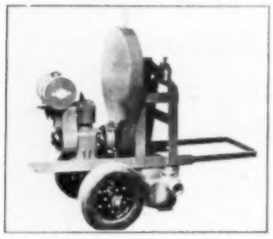
The electric element is embedded in porcelain and encircles the cast-iron crucible. On two of the models there are two windings, one operating continuously and the other working through a thermostat which levels off the heat-response curve. The third, Model 31, has no thermostat.

A feature in the construction is the detachable splash guard surrounding the crucible to protect an operator against burns caused by splashing or overflow of the solder. There is also a plate into which dross can be scraped and a means to maintain a clean area around the crucible.

BREVITY—Identify by IEN - 3868 if you write the maker

PUMP . . Diaphragm design, engine drive, 35 and 54 gpm. ratings

Source: MARLOW PUMPS
Box 566-A, Ridgewood, N. J.



Mud Hog designates new pump intended for portable use, particularly in maintenance and construction work. It can be lifted on and off a truck by two men. It is available also in the rubber-tired wheel mounting shown in the illustration. Two sizes rate 35 and 54 gpm. and have 2 and 3-in. suction and outlet. Both will operate on a 25-ft. suction head and will handle liquids almost heavy enough to shovel.

Inlet is through a male suction fitting and a replaceable flapper valve for free flow under the diaphragm. Delivery is through a second rubber flapper valve and a discharge fitting. Valve seats are self-cleaning. The pump body is separated from the drive after removing four cap screws for access to the diagraphm.

Drive is by a 2-hp. gasoline engine with geared reduction and chain connection to a crankshaft mounted in self-aligning pillow blocks. A steel shaft connects from the crankshaft to the diaphragm of a new rubber and fabric composition.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3869 if you write the maker

the new APCO TORQUE WRENCH "CLICKS"

. . . warns worker when preset tension is reached!

No. PF 50
0-800 inch lbs.
Length 13"
Weight 1½ lbs.

Apco Tension Drivers, available in four standard sizes. 0-25, 0-6, 0-12, 0-80 inch lbs. Interchangeable heads on two largest sizes.

Simplifies mechanical operations and eliminates "guesswork" on assembly and maintenance work — particularly in hard-to-get-places—wherever nuts, bolts, and studs require specific tensioning. Made with dial for accurate preset tension, this wrench makes a distinctly audible "click" when preset torque is reached. Unaffected by temperature change or jarring, guaranteed accurate. Apco Torque Tools—made of heat-treated nickel steel—are available in both visible and preset dial models—in sizes from zero to 280 inch grams., up to 2,000 ft.-lbs.

SEND FOR DESCRIPTIVE FOLDER TODAY!

APCO MOSSBERG CO.
161 LAMB ST., ATTLEBORO, MASS.

BREVITY—Identify by IEN - 3870 if you write the maker

"IPS" CAST IRON PIPE for DOWNSPOUTS, WASTE and VENT LINES

Plain or Threaded Ends

Integral Calking Hubs

"IPS" MEANS Iron Pipe Size, having the same outside diameter as steel or G.W.I. pipe.

Now specified by leading architects and engineers for new and replacement piping.

Can be cut and threaded with ordinary tools of the piping trade.

Either plain or threaded ends: 18 foot lengths, sizes 3, 4, 5, 6, 8, and 10 inches. . . .

Or integral calking hub, other end plain: 18 foot lengths, sizes 4, 6 and 8 inches.

Write for Form 4-26-50.

JAMES B. CLOW & SONS
301-299 North Talman Avenue Chicago 80, Illinois

WHOLESALE DISTRIBUTORS OF PIPE, VALVES AND FITTINGS FOR INDUSTRIAL USE

BREVITY—Identify by IEN - 3871 if you write the maker

"COMMERCIAL"

Tank heads are cold formed in steel dies insuring uniformity in circumference and diameter, with smooth flanges. All styles and sizes made to 72" diameter.

Our catalogue P-1 gives our complete line, and data for tank builders — write for it.

We also manufacture heavy and medium gauge stampings.

THE COMMERCIAL SHEARING & STAMPING CO.
P. O. BOX 719 YOUNGSTOWN 1, OHIO

BREVITY—Identify by IEN - 3872 if you write the maker

HOLTITE SPECIALS

Very often a Special threaded part, designed for a specific purpose, will replace several parts or fastenings, increase holding power, improve appearance, and effect substantial savings in materials and labor cost.

Our equipment and facilities for producing Special parts and fastenings are second to none. Send samples, specifications or blue prints for prompt quotations. Our Engineering Staff will gladly study your assembly for fastening improvements, and make recommendations for the most efficient applications.

CONTINENTAL SCREW CO. New Bedford, Mass., U.S.A.

BREVITY—Identify by IEN - 3873 if you write the maker

for air conditioning, packaging, refrigeration, air, printing equipment, etc.

The "M" Series valves are approx. 4⅝" high, yet have extremely fast action and large capacity for liquids, air and inert gases! They have soft insert seats to prevent leakage — will operate in any position— nylon fabric coated diaphragm for long life—max. power consumption 10 watts—continuous duty! M-2 two-way normally closed —5 to 150 p.s.i.—port size ⅜" or ½"; orifice ⅜"—pilot operated. M-3 three-way normally closed, three-way normally open or directional flow—20 to 150 p.s.i.—port size ⅜" or ½"; orifice ⅜"—pilot operated. Special models available.

Write for Bulletin No. 493

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

BREVITY—Identify by IEN - 3874 if you write the maker

Don't go any further
for Cast Brass Components and Machined Brass and Bronze Castings
FOR ORDNANCE PROCUREMENT ORDERS

- **HAYS** . . . one of the nation's largest producers of machined brass and bronze castings
- **FACILITIES**
  Pattern Department . . .
  Brass Foundries . . .
  Precision Machines . . .
  Capable of producing large quantity requirements
- **PERSONNEL**
  Design, tool, and production engineers . . . Expert craftsmen . . . with many years of service
- **QUALITY**
  Reputation that results from 80 years' experience in supplying the water and gas utilities, manufacturers in the appliance, industrial, and marine fields, and from producing materiel for the ARMY, NAVY, and AIR FORCE.

Submit your requirements with details, specifications, and delivery for prompt quotation.

STOP

MORE THAN 3500 CATALOGED PRODUCTS MANUFACTURED BY HAYS

Here's another of the specialized products designed and produced by HAYS . . . the "ELECTROFLO" Valve.

The "ELECTROFLO" combines the power of electricity with flow pressure in a valve that sets new standards of performance at low cost. Delivers maximum flow . . . handles water or air . . . readily adapted to all types of control devices.

HAYS MANUFACTURING COMPANY
General Offices, Machining, Fabricating and Assembly Plant
HAYS
809 West 12th Street, ERIE, PA.
Foundries: Erie, Pa., and Albion, Pa.

BREVITY—Identify by IEN - 3876 if you write the maker

WRENCH . . Electric impact tool for use in nut driving to ½ inch

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.

Model 2-EW is a new reversible motor-driven impact wrench for operation on 110-volt ac. or dc. or, to specification, on 220 volts. The impact mechanism is mounted in anti-friction bearings, operates without imposing reverse kick or twist action. Assembly is in a die-cast aluminum housing. List price is $120.

The tool will apply and remove screws, studs, nuts. It also can be employed to tap, drill, ream, to drive wood bits, hole saws and wire brushes. It measures 11 in. in overall length, weighs 7 lb., is controlled at a trigger switch.

BREVITY—Identify by IEN - 3877 if you write the maker

LIGHTING . . Luminous paints, pigments, fluorescent, phosphorescent

Source: CANADIAN RADIUM & URANIUM CORP.
630 Fifth Ave., Room 621, New York 20, N. Y.

Detail data in 8-page booklet

Various colors are available in a new Glo-N-Glo line of paints and pigments in fluorescent form for activation by ultra-violet light and in phosphorescent form that will glow for a considerable period of time after an activating light source has been removed. The paint is available in correct consistency for brushing, spraying and for silk-screen application. The pigments can be mixed with molding powders and are suited for use in coating papers or textiles.

Applications include use for display purposes, to outline hazardous locations, to set up direction indicators in dark locations, to provide a novel product finish.

BREVITY—Identify by IEN - 3878 if you write the maker

CLEANING . . Portable vacuum machine, wet or dry pickup, also for blowing

Source: IDEAL INDUSTRIES INC.
2014 Park Ave., Sycamore, Ill.

Blo-R-Vac is a new tank-type caster-mounted vacuum cleaning machine for wet or dry pickup and also for application as a blower. The assembly includes a 12-gal. rust-resistant tank set on four caster wheels and the company's motor-driven portable blower unit which can be employed interchangeably in suction and pressure operation. Two models in the line rate 1¼ and ⅔ hp.

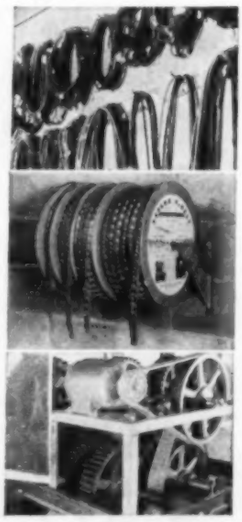
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3879 if you write the maker

VEELOS SAVES YOU TIME AND MONEY IN THE STOCKROOM . . .
No costly, hard-to-handle, dangling mess of different sizes of endless v-belts with Veelos, the adjustable v-belt, because . . .

VEELOS IS ALWAYS READY IN JUST THE WIDTHS YOU REQUIRE . . .
Four reels of Veelos alone can replace up to 316 sizes of endless v-belts in the O, A, B and C widths.

VEELOS ASSURES MAXIMUM MACHINE PRODUCTION . . .
Veelos is easy to install, gives vibrationless, full power delivery. Because Veelos is adjustable, uniform belt tension is easily maintained.



VEELOS
THE ONE
V-BELT

ADJUSTABLE TO ANY LENGTH
ADAPTABLE TO ANY DRIVE

Write for copy of the Veelos Data Book.

MANHEIM MANUFACTURING & BELTING CO.
651 Manheim St., Manheim, Pa.

Made in all widths in three types: Regular, oil-proof and static conducting. Also double V in A and B. Packaged on reels in 100-foot lengths. Veelos is known as Veelink outside the U.S.

BREVITY—Identify by IEN - 3880 if you write the maker

END WASTEFUL
"hit or miss"
PROCESSING

SYLPHON

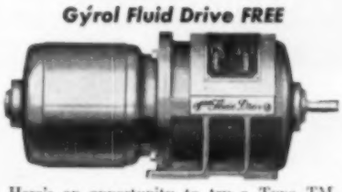
Temperature Regulators control temperatures accurately, economically

● *Uniform* processing conditions are assured with Sylphon Regulator 923 (pictured). The *right* temperature is maintained automatically. Wasteful manual methods of regulating temperature are eliminated; overheating and spoilage prevented. Sylphon Regulator 923 is self-powered, self-contained, rugged, dependable. Ideal for washers, dryers, open and closed tanks, many other types of equipment. Available with dial-indicating thermometer (923-T). Write for Catalog GN-B.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

BREVITY—Identify by IEN - 3881 if you write the maker

NOW TRY
Gyrol Fluid Drive FREE



Here's an opportunity to try a Type TM Gyrol Fluid Drive without obligation. We invite you to install one on your own machine —on a free trial offer basis.

We want you to see for yourself how these remarkable units save power, provide smooth acceleration, absorb shocks, and provide overload protection.

Write us direct. Describe the machine on which you want to use the TM unit and give horsepower of present motor. We'll contact you to arrange installation and trial period.

AMERICAN BLOWER
American Blower Corporation, Detroit 32, Michigan
Division of American Radiator & Standard Sanitary Corporation

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 3882 if you write the maker

GRAMIX
bearings are self-lubricating

Gramix parts, precision die-pressed of powdered metal mixtures, are oil-impregnated during manufacture for self-lubrication. Once installed, they need no oiling, greasing, or servicing. Gramix parts require no costly machining and they stand up under all operating conditions. Write today for full facts.

THE UNITED STATES GRAPHITE COMPANY
Division of The Wickes Corporation
SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 3883 if you write the maker

• *Data* on instrument ball bearing dimensions, load ratings, tolerances, mounting, etc. *Information* on instrument ball bearing standards. *Illustrations* of typical instrument bearing applications. Send for copy of Instrument Bearing Catalog. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 3884 if you write the maker

AMERICAN-Standard
First in heating . . . first in plumbing

Give factory rest rooms

- **greater capacity**
- **increased sanitation**
- **easier cleaning**

. . . modernize with the SANISTAND FIXTURE

● Installations all over the country prove that the best place to start factory rest room remodeling is with the Sanistand fixture—the new American-Standard urinal for women.

Reports from factories where Sanistand fixtures are installed show that rest room traffic has been speeded up . . . in some cases rest rooms now handle twice the number of women with less confusion. Maintenance staffs say rest rooms are cleaner, neater . . . can be kept that way with a minimum of expense and work.

This new fixture is made of easy-to-clean, genuine vitreous china. Its large bowl and outlet discourage misuse and clogging. For modernization, the Sanistand fixture can usually replace a water closet, and is adaptable to either hand or foot flushing. It is shown here with the wall-hung Buena Lavatory.

For more information on this new fixture, send in the coupon below, or get in touch with your plumbing retailer. **American Radiator & Standard Sanitary Corporation**, Dept. IEN-4, Pittsburgh 30, Pennsylvania.

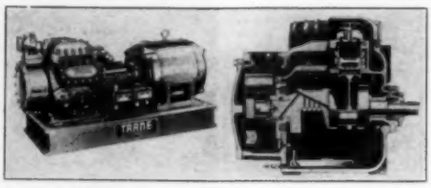
American Radiator & Standard Sanitary Corporation
Dept. IEN-4, Pittsburgh 30, Pa.
Please send me, without obligation, your new Better Rest Room Guide including complete information on the Sanistand fixture.
Name.....
Firm.....
Address.....
City..... State.....

Serving home and industry: AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON

BREVITY—Identify by IEN - 3886 if you write the maker

REFRIGERATING . . Compressor, six sizes rate from 10 to 50 ton

Source: TRANE CO.
2017 Cameron Ave., La Crosse, Wis.



New assemblies including 4, 6 and 8-cylinder designs, are included in a line of six reciprocating refrigerant compressors designed for operation with F-12 Freon and for direct drive at constant speed of 1,750 rpm. Quiet, vibration-free operation characterizes each of the units. No special foundation, floor construction or sound proofing is required.

Control is by an unloading mechanism which governs the suction valve in each cylinder, or pair of cylinders, so they are prevented from functioning normally when demand for cooling drops off and suction pressure is lowered. Reduction in capacity is made in three steps to minimum operating level. Further reduction in the suction pressure shuts off the compressor entirely. From this point the cylinders cannot be loaded or the suction valves closed until the oil pressure builds up so restarting is in unloaded position.

Lubrication is by forced feed with crankshaft oil passages designed so centrifugal force carries foreign matter away from the bearing surfaces and traps it against magnetic plugs. The oil is filtered twice before reaching the bearings.

BREVITY—Identify by IEN - 3887 if you write the maker

GAGE . . Automatic assembly sorts small work pieces by size

Source: FEDERAL PRODUCTS CORP.
1140 Eddy St., Providence 1, R. I.

Model 144B-12 is a new assembly of equipment employing three of the company's Electricator gages with electronic equipment that picks up minute current from the gages and amplifies it to operate gates leading to four tote boxes. Small cylindrical work pieces are filled into a hopper reaching down into the center of a Syntron rotary vibrating feeder which aligns them and feeds them through a tube to the gages.

The gates are opened as each work piece moves from gaging position so the pieces are sorted into "over," under" and two ranges covering .003 in. of tolerance each. The operator's activities are limited to keeping the hopper filled and in removing filled tote boxes and replacing them with empty ones. The pieces themselves measure about ½ in. in diameter by ¾ in. in length. They move through the gaging operation at one piece per second.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3888 if you write the maker

A Robertshaw MULTI-PURPOSE GAS THERMOSTAT *that is*

- ★ LOW IN COST
- ★ EASY TO INSTALL
- ★ COMPACT
- ★ ACCURATE
- ★ DIRECT-ACTING

GLUE POTS
INDUSTRIAL OVENS
CHICKEN BROODERS

Requires no electrical connection, relay or solenoid valve. Serves a wide variety of uses for temperature not exceeding 650° maximum.

Write for complete information

In Home and Industry, EVERYTHING'S UNDER CONTROL

Robertshaw
THERMOSTAT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
YOUNGWOOD, PENNSYLVANIA

BREVITY—Identify by IEN - 3889 if you write the maker

Dusting the Old Apple

In baseball when the batter "dusts the old apple" he is scoring a hit, often for extra bases.

Torit Dust Collectors

are a hit wherever industrial dusts create a problem.

The Torit Dust Collector is one of those compact, solidly built hitters. It crowds right up to the plate (your cut-off, grinding or polishing machine), and when that old apple (dust particle) comes whizzing by it is socked for all four bases.

Self-contained Torit Dust Collectors range in size up to 5 H.P. There are models for every standard dust-creating machine, while special applications can be quickly made to order. They are available in both cabinet and cyclone types.

If you use dust-making machines it will pay to scout the Torit Dust Collector. Just drop us a line, outlining your problem and we'll give you batting averages and all other pertinent data, including catalog covering the complete line.

TORIT
Manufacturing Co.
286 Walnut St., St. Paul 2, Minn.

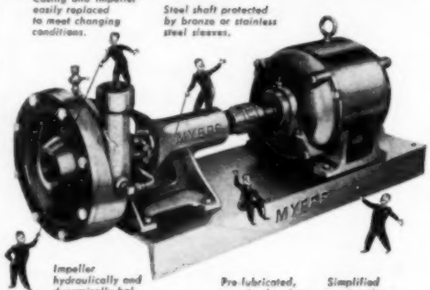
BREVITY—Identify by IEN - 3890 if you write the maker

You Can See the extra value in NEW MYERS centrifugal pumps!

New Myers Direct-Connected Centrifugals: Available with or without motor. Sizes, ½ H.P. to 10 H.P.

Casing and impeller easily replaced to meet changing conditions.

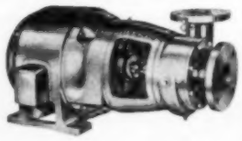
Steel shaft protected by bronze or stainless steel sleeves.



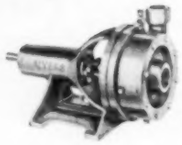
Impeller hydraulically and dynamically balanced—minimizes thrust.

Pre-lubricated, oversize bearings—extra durable.

Simplified construction—requires minimum installation space.



New Myers Motor-Mounted Centrifugals: Extra-compact. Exceptionally rugged. Sizes 1 H.P. to 20 H.P. Available in three material combinations—standard fitted, all-bronze and all-iron.



New Myers Belt-Driven Centrifugals: V-belt or flat-belt drive. Oversize shaft is removable from either end of pump. Types to handle many different liquids at temperatures to 220° F.

Steady volume . . . outstanding operating economy . . . smooth, trouble-free performance—you get them *all* in these new Myers Centrifugal Pumps. Line includes models that are ideal for general industrial applications—including drainage, booster service, air conditioning, etc.—also adaptable for irrigation and many other agricultural uses. All Myers Centrifugals are easily serviced. Capacities to 650 gpm. Write for complete catalog and name of your distributor.

TAKE OFF YOUR HAT TO MYERS
PUMPS · WATER SYSTEMS · SPRAYERS · HAT TOOLS

THE F. E. MYERS & BRO. CO.
Dept. T-222, Ashland, Ohio

BREVITY—Identify by IEN - 3892 If you write the maker

BURNDY • BURNDY • BURNDY • BURNDY • BURNDY

compact as a fist!

SERVIT

Forged for high strength — provides more intimate contact between conductors. Installed with any wrench. Compact, all edges rounded, easy to tape. Stocked by your Burndy Distributor.

SEE YOUR BURNDY DISTRIBUTOR

BURNDY ENGINEERING CO., INC. NEW YORK 54, NEW YORK

BREVITY—Identify by IEN - 3893 If you write the maker

OHMITE RHEOSTATS

BUILT FOR Unfailing Dependability

UNIFORM CONTACT PRESSURE — Spring steel contact arm assures uniform contact pressure.

UNIFORM SLIP-RING PRESSURE — Compression spring maintains uniform pressure and electrical contact between slip ring and center lead. This pressure is independent of contact brush.

METAL-GRAPHITE BRUSH — Assures perfect contact with negligible wear on the wire.

STOP PREVENTS STRAIN ON CONTACT ARM — Stop, keyed to the shaft, limits rotation of the arm. No torsional strain is imposed on the arm in stopping.

SHAFT INSULATED FROM LIVE PARTS — High strength ceramic hub insulates shaft and bushing from all live parts.

WEAR-RESISTANT BEARING — Brass bushing for the steel shaft provides a wear-resistant, wobble-free bearing.

THREE TERMINALS — Three terminals permit use as a potentiometer (voltage divider), and permit alternate rheostat connections.

LOCKED-IN WINDING — Special alloy wire is wound over porcelain core—each turn firmly locked in vitreous enamel.

VITREOUS ENAMEL BOND — Vitreous enamel bonds the ceramic core and base together into one integral unit.

BEND-UP LOCK WASHER — Bend-up lock washer provides positive assurance against loosening of the assembly nut.

Write on Company Letterhead for Catalog and Engineering Manual No. 40.

OHMITE MFG. CO.
4814 Flournoy Street, Chicago 44, Illinois

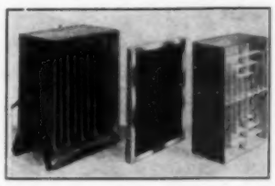
Be Right with OHMITE®

RHEOSTATS • RESISTORS • TAP SWITCHES

BREVITY—Identify by IEN - 3895 If you write the maker

TESTING . . Black light source makes fluorescent markings visible

Source: SCIENTIFIC INSTRUMENT INC.
Box 92-A Homecrest Station, Brooklyn 29, N. Y.



Cold cathode ultraviolet grid lamp is employed in this new Blacklite source to produce radiant energy in the range between 3,200 and 4,000 Angstrom units. Not visible to the human eye, the light rays, however, do bring into bold relief fluorescent markings for surface flaw detection, for identifying purposes as in worker checking, for fluorochemical analysis and general laboratory work involving fluorescent materials.

The unit operates on 110-volt 60-cycle ac. It is self-contained with a switch and extension cord. A filter glass and adjustable diffuser can be specified as optional equipment. Finish is in silver gray enamel. List price is $75. Operation is at a little more than body temperature. Service life is 10,000 burning hours, approximately. Overall dimensions are 8¾ by 6¼ by 10¾ inches. Weight is 16½ pounds. Effective range of the new equipment is 20 feet.

BREVITY—Identify by IEN - 3896 If you write the maker

BALLS . . Made of nylon for valves, bearings, detents, checks

Source: ACE PLASTIC CO.
91-32 Van Wyck Blvd., Jamaica 1, N. Y.

Available in any quantity

Sizes range from ⅛ to ¾ in. with tolerance at plus or minus .001 in. in a new line of nylon balls. The material is tough at low temperatures. It is abrasion resistant, light in weight. It has good chemical resistance and is stable at high temperatures. Water absorption is negligible.

BREVITY—Identify by IEN - 3897 If you write the maker

PROTECTING . . Plastic lenses and plate for goggle, helmets

Source: GOGGLE PARTS CO.
1466-70 W. 9th St., Cleveland 13, Ohio

Rexlite trade names a new line of 50-mm. clear optical lenses. Acelite trade names a companion line of cover lenses and also of plastic cover plates, the latter for welding helmets and hand shields. Chief characteristic is resistance to impact and pitting. The new lens is unconditionally guaranteed against breakage in service. When it does break, under extraordinary abuse, it cracks as indicated to the right in the illustration and does not shatter as shown in the left-hand lens, which was made of optical glass.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3898 If you write the maker

Requires no other outside wrapping for the first surface is high quality Kraft paper. Use any kind of fastener . . . pressure-sealing tape, twine, gummed tape, staples, stitches, or steel strapping. Available in rolls up to 72" wide, 250 feet long or in sheets, cut to order. Four weights: 35, 55, 70 and 100 lb. basis. (Approved under Army and Navy Specs.)

Write Dept. 591-P for samples and literature.

Shelton Manufacturing Co., Inc.
591 Ferry St., Newark 5, N. J.

Corrugated Paper Products Since 1919

BREVITY—Identify by IEN - 3899 If you write the maker

BREVITY—Identify by IEN - 3900 If you write the maker

NOW A WIDE RANGE OF AIR PRESSES

Cut Costs...

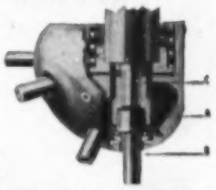
These presses deliver from 4 to 28 times the air line pressure, cost from $27.50 to $135.00, and will pay for themselves many times over in faster, more uniform production on light skating, crimping, assembling jobs. Write for new catalog of air cylinders and other air-operated devices.

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. 8-41-A, CHICAGO 41, ILL.

BREVITY—Identify by IEN - 3901 If you write the maker

MORE HOLES PER HOUR — PER DOLLAR

Increase production of any standard drilling machine by adding a Lign-o-matic, the only drill turret with the patented, self-centering principle that guarantees sustained accuracy equal to the drilling machine itself.



FOR ALL CONSECUTIVE DRILL PRESS OPERATIONS

PROVED PRODUCTION INCREASE — Turret indexes faster than tools can be changed or work moved to another spindle. A single Lign-o-matic will release 5 drilling machines for other work and still show increased production and reduced costs on original job.

VERSATILITY — Fits any standard drilling machine without altering the machine. Handles operations such as drilling, reaming, counterboring, and tapping (on reversible spindle machines), up to ½" diameter in any material.

PRECISION — Patented, self-centering tapered drive (A) automatically locks turret spindle (B) into exact alignment with drilling machine spindle (C) for sustained accuracy.

GUARANTEE — May be returned in 10 days for any reason for full refund of purchase price. Two-year guarantee against defective parts.

PRICE — Model D, 6 spindles with No. 2 Jacobs male taper $235.00
Chucks extra at established prices.

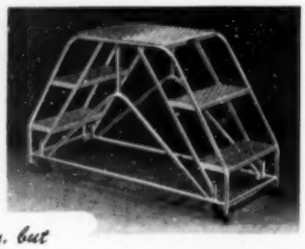
DELIVERY — Currently, 2 weeks.

☐ Please rush ..... Lign-o-matic turrets for
(drill press make)..... (size).....
(quill dia.)..... (spindle taper).....
My name .....
Title .....
☐ Please send literature on Lign-o-matic turret. (Attach coupon to company letterhead)

HOWE & FANT, INC.
326 FLAXHILL RD., SO. NORWALK, CONN.

BREVITY—Identify by IEN - 3902 if you write the maker

NEW ALL STEEL A-TYPE SAFETY LADDER



Rolls easily, but automatically "locks" to floor when used.

For use on busy assembly jobs and in stockroom aisles, the Ballymore A-Type ladder permits two or three persons to work where only one can work with a standard ladder.

Will not "kick-out" because rubber tipped legs engage floor automatically when ladder is used.

Write Today For Complete Information

THE BALLYMORE COMPANY Wayne 4, Pa.

BREVITY—Identify by IEN - 3903 if you write the maker

ROTOR TOOLS "PAID OFF" IN 30 DAYS!

A MANUFACTURER of impellers found grinding in corners and around curves a tough, time-taking job. Then the Rotor Application Engineer gave his recommendations.

Straight wheel and cone grinders were replaced with Rotor Air Verticals that use 9-inch flexible sanding pads. This eliminated all wheel marks, made it possible to get into those curves and corners, and use the same type grinder for all operations.

The result—a 21% reduction in grinding time. Thus the Rotor tools paid off their cost in less than 30 days. Production quality is better too.

Want to get similar benefits in your grinding operations? Call in the Rotor Application Engineer, or write for Catalog 35.

AIR O'TOOL

THE ROTOR TOOL CO. CLEVELAND, OHIO

BREVITY—Identify by IEN - 3904 if you write the maker

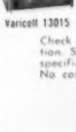
ENGINEERING DATA ON VOLTAGE CONTROL EQUIPMENT

Powerstat 112G

☐ VARIABLE TRANSFORMERS Wide selection of manual and motor driven POWERSTATS are available for air cooled, oil cooled and explosion-proof operation in ratings from 405 VA to 100 KVA. Bulletin P530.

Stabiline EM415

☐ ELECTROMECHANICAL REGULATORS STABILINE Type EM is available in 115, 230 and 460 volt single phase and three phase ratings in capacities from 2 to 100 KVA for controlling large industrial loads. Bulletin 5351


Variacoil 13015

☐ VARIABLE D-C POWER SUPPLIES VARICRIS operate from a-c power lines to deliver a regulated and stabilized variable d-c output voltage. Bulletin 2504.

☐ INSTANTANEOUS ELECTRONIC REGULATORS STABILINES Type IS are available in ratings from 0.25 to 5 KVA. No moving parts. Waveform distortion never exceeds 3%. Output voltage held to within ±0.1 per cent of nominal for wide line variations, to within ±0.15 per cent of nominal for any load current or power factor change from lagging .5 to leading .9. Bulletin 5351

Stabiline IES101R

Binding Post Type DF308C

☐ 5 WAY BINDING POSTS Provide for spade lug, clip lead, banana plug, tinning and clamping connections. Available in black and red. Bulletin 6501

☐ A-C POWER SUPPLIES VOLTBOXES are a portable source of variable a-c voltage. Contained in a compact unit are all the necessary components for variable a-c voltage testing. Bulletin P530.

Voltbox UC1M

Check bulletins of interest and mail ad for prompt attention. Superior field engineers are available to study your specific problems and make practical recommendations. No cost or obligation on your part. 1204 Church Street.

THE SUPERIOR ELECTRIC CO. BRISTOL, CONNECTICUT

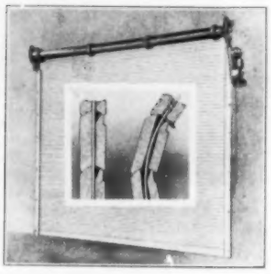
NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

TEAR OUT, CHECK AND MAIL THIS AD TODAY

BREVITY—Identify by IEN - 3905 if you write the maker

DOOR . . Wood rolling design hand or power operation, to 20 by 22 ft.

Source: KINNEAR MFG. CO. 4002 Fields Ave., Columbus 16, Ohio



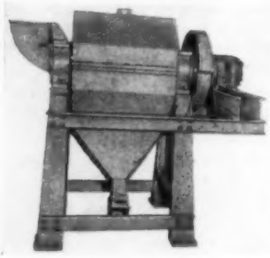
Wood slats are joined together by metal tape or cable in this new design of the company's wood rolling door. It was initially developed for installations requiring resistance to corrosion. It has been recently improved and is now available for general use and in conservation of metal equipment. Standard sizes range in width between 8 and 20 ft. and in height between 7 and 22 ft., based on required clearances. Operation can be specified by hand, hand chain or motor drive.

The door assembly coils upon a barrel supported in cast-iron brackets mounted at the corners of the opening above the lintel. The door travels in wood guides at the sides of the opening. Helical springs enclosed in the barrel provide counterbalancing. The slats are made of seasoned and treated wood. They measure $2\frac{1}{16}$ in. by $\frac{13}{16}$ in., or by $1\frac{1}{16}$ in. depending upon the size of the door or upon specification.

BREVITY—Identify by IEN - 3906 if you write the maker

SEPARATING . . Rotating drum machine recovers metals from waste materials

Source: PEERLESS METAL SEPARATOR CO. 156-60 Greene St., New York 12, N. Y.



Slag, dross, skimmings, sweepings that contain recoverable metals such as aluminum, brass, bronze, babbits, lead, magnesium are fed into a hopper at one end of this new machine to pass into a revolving drum. Steel balls in the drum reduce the materials to shot and dust. Lengthwise slots in the drum permit the dust and metal shot to drop into a cylindrical screen attached to the outside of the drum.

The dust passes through the screen into a discharge hopper. The metallic material is retained. When grinding is completed drum rotation is reversed and the recovered metal is conveyed out through the hollow shaft at the end of the machine opposite to the charging hopper. Two machine sizes rate 350 and 1,000 lbs. per hour. Overall dimensions are 4 by 6 by 5 ft. and 5 by 7 by 6 feet.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Try the hundreds of listings in index, page 114

BREVITY—Identify by IEN - 3907 if you write the maker

FOTO-FLO* MODEL C PHOTO-COPYING MACHINE

New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 51-57 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK Branch Offices in Principal Cities

Photocopy Papers • Photo-copying Machines • Photographic Papers

BREVITY—Identify by IEN - 3908 if you write the maker

DANLY

KNURLED SOCKET HEAD *Cap Screws* AND *Stripper Bolts*

Knurled heads assure a firm finger grip for quick setting by hand . . . key type hexagon socket wrenches assure easy driving, even in awkward locations . . . precision threads assure greater thread bearing and resistance to stripping.

Send for this folder for complete catalog and purchasing information.

DANLY MACHINE SPECIALTIES, INC. 2100 South Laramie Avenue, Chicago 50, Illinois

PRECISION DIE SETS...TOOL, DIE AND GAGE MAKERS' SUPPLIES

BREVITY—Identify by IEN - 3909 if you write the maker

Townsend Saves Customer $12,000 In One Year With This Cold Headed Part

There may be several parts you are now using that Townsend can produce for you by cold-heading at substantial savings just as we did for a mid-west washing machine manufacturer. Originally the wringer spring rod shown above cost them $33.40 per thousand. Then a Townsend engineer suggested a change in design which eliminated one complete step in the manufacturing operation. This simple change reduced the cost to $20.95 per thousand—a clear savings of $12.45 per thousand. On an annual basis they save more than $12,000 on this part alone.

Savings like this are not unusual with Townsend customers—this is a typical example—some manufacturers save even more. Such economy is a reflection of the size and experience of the Townsend organization and demonstrates the possibilities for savings even on simple items.

Townsend makes 60 million items every working day by cold-heading and extruding—then they may be pointed, machined, drilled, slotted, trimmed, threaded, pierced, knurled, bent, or flattened. We make parts of carbon steel, alloy steels, in bronze, copper, monel and aluminum. These are supplied in a variety of platings and finishes. If you want to learn more about the economy of cold-heading by Townsend ask to have one of our engineers call.

Townsend COMPANY • ESTABLISHED 1816

Plants—New Brighton, Pa. • Chicago 38, Ill.

Division Sales Offices—Philadelphia, Detroit, Chicago

Sales Offices in Principal Cities

BREVITY—Identify by IEN - 3911 if you write the maker

CAL-WIC...for convenient source of supply

With plants on both the East and West Coast we are able to offer wire cloth users in all parts of the country a convenient and economical source of supply. Cal-Wic wire cloth meets a multitude of industrial needs; is available in most needed weaves, meshes and weights and in various metals and alloys. Write for illustrated descriptive catalog MS-661.

CAL-WIC INDUSTRIAL SCREENS CF&I

IN THE EAST—WICKWIRE SPENCER STEEL DIVISION • Clinton, Massachusetts
IN THE WEST—THE COLORADO FUEL & IRON CORP. • Denver 2, Colorado
ON THE PACIFIC COAST—THE CALIFORNIA WIRE CLOTH CORP., Oakland 6, Cal.

BREVITY—Identify by IEN - 3912 if you write the maker

FOR SAFETY *Interlock!*

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".

Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

Provides a predetermined sequence of operation...and prevents "mental lapse" which might cause damage to men and equipment.

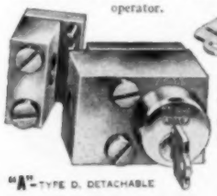
A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.

"B"-TYPE F FLAT MOUNTING



"A"-TYPE D. DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

Write for Bulletin 1700 for many more details.

RAILWAY AND INDUSTRIAL ENGINEERING CO.
KERR STREET • • • • GREENSBURG, PENNSYLVANIA

BREVITY—Identify by IEN - 3914 if you write the maker

SEALING . . Dielectric equipment to fabricate thermoplastic material

Source: ELECTRONIC PROCESSES CORP.
351 N. Market St., San Jose 10, Calif.

No. 112 is a new dielectric generator providing 4,000 to 5,000 watts of plate input power to operate one of the company's No. 116 platen presses as shown in the illustration or a No. 115 two-post press. The former press takes electrodes to make sealing outlines of intricate shape. The No. 115 assembly mounts a straight or curved-line electrode to 40 in. in sealing length. Generator operation is on 220-volt, 60-cycle single-phase ac. Dimensions are about 21 by 14 by 35 inches. The 4000-watt input rating is based on a 50 per cent duty cycle of 2 seconds on and 2 seconds off.

High-frequency energy is set for the electrodes through a variable tuning inductor. Both grid and plate circuits are monitored. Radio-frequency traps and line filters prevent radiation to meet FCC regulations. Circuit breakers protect the power circuits. Cabinet interlocks hold the circuits open when access doors have been opened.

Bulletin, 8 pages, "Plastic Welding with Electrotherm High Frequency Equipment," presents illustrated data showing typical work and the line of equipment to include generators and presses. A page of dimensional data is included.

BREVITY—Identify by IEN - 3915 if you write the maker

INDEXING . . Head mounted spindle is positioned by turning worm in gear

Source: ALLAN MFG. CO.
22-78 Steinway St., Long Island City 5, N. Y.

Spindle measuring 1½ in. in diameter is threaded on its nose end to take a standard chuck as employed on a 9 or 10-in. lathe spindle and is fitted with a $\frac{13}{16}$-in. through hole and standard taper for bar stock and lathe collet. The spindle is mounted in a Meehanite cast housing and is equipped for rotating and positioning by a worm and gear and a graduated crankwheel. Angular positions can be set to .1 deg. against the graduations and can be estimated finer.

The assembly includes a locking screw to hold the spindle in a set position and a circular graduated base that applies on a lathe carriage or the table of a grinding machine or milling machine. The unit is designed particularly to fit on a 9-in. South Bend lathe or its equivalent. List price is $79.50. Designation is Du-Ona-Lathe.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3916 if you write the maker

Phillips NATIONALLY APPROVED EXCELSIOR STORAGE CANS

ARE YOUR PROTECTION AGAINST COSTLY FIRES

Approved and Recommended by Insurance Companies, State and Municipal Authorities; meets all fire regulations.

"PHILBIN" STORAGE CANS

REDUCE YOUR FIRE HAZARD IN THE STORING OF ALL INFLAMMABLE PACKING MATERIALS

"PHILBIN" Storage Cans meet all fire insurance regulations. Construction is of heavy gauge steel. Fusible links allow air tight cover to close in case of fire, and also permits cover to remain open leaving both hands free to work within can. Ideal for storage of rags, paper, paint, straw, and all packing materials.

Can pictured above with fusible links—$29.00 F.O.B. Chicago. Furnished with casters if so desired at slight additional cost.

PHILLIPS MANUFACTURING COMPANY
3475 Touhy Avenue • Chicago 45, Illinois

BREVITY—Identify by IEN - 3917 if you write the maker

"CIGAR, MARY?"

Just because Joe enjoys a good stogie, he shouldn't assume Mary enjoys one, too!

And just because one bearing is best lubricated by one particular grade of oil, you shouldn't assume that the same oil is best for *all* bearings on that machine. In many cases it isn't.

OIL CUPS permit you to lubricate each bearing with the oil best suited to that bearing—thus prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production. And oil cups fortunately *cost very little.*

Gits oil cups have been the standard for industry for more than 40 years. Gits Bros. has the largest selection of oil cups available anywhere. Call on Gits Bros. for a prompt, efficient solution to your lubrication problems.

Write for free Price Guide Catalog

GITS BROS. MFG. CO.
1854 S. Kilbourn Ave. • Chicago 23, Ill.

BREVITY—Identify by IEN - 3918 if you write the maker

FAN-PLAN

...with the Future in mind

Today it is more important than ever to install fans that will give dependable ventilation for years to come. That's why it pays to ventilate with Emerson-Electric Oscillators featuring case-hardened steel shafts, forced-feed lubrication, virtually wearproof bearings and the 5-Year Guarantee. Keep the future in mind . . . Fan-Plan with Emerson-Electric Fans. Write for 1951 Fan Catalog No. 219.

THE EMERSON ELECTRIC MFG. CO. • St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

BREVITY—Identify by IEN - 3919 if you write the maker

REZNOR

WORLD'S LARGEST SELLING GAS UNIT HEATER

Hung from ceiling or mounted on floor

LABOR SAVING HEATING MACHINE

"Boom to thousands"

Every factory and commercial building . . . every store and office can profit by this world's most universally used and easily installed gas heater. Without a fireman, beautiful Reznor units automatically manufacture and distribute heat for every required area.

There's a dealer near you.

REZNOR MANUFACTURING CO.
10 UNION ST. • MERCER, PENNA.
Send me 20-page catalog in full color

Name _____
Firm _____
Address _____
City _____ Zone ____ State ____

BREVITY—Identify by IEN - 3920 If you write the maker

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

Typical of some of the larger parts cast centrifugally and precisely finished at Shenango, this a 45" cylinder bushing for use in a high hydraulic metal forming press.

CENTRIFUGALLY CAST BY SHENANGO...

for a longer life under pressure

THERE's a way to save money on symmetrical parts. Do as many companies do—turn to Shenango for *centrifugally* cast parts or assemblies . . . large or small . . . ferrous or non-ferrous . . . semi-machined or precisely finished to specification.

You'll gain by the most advanced techniques. Metal for metal you get greater strength and better resistance to wear, to say nothing of relief from sand inclusions, blow holes and other defects.

GET ALL THE FACTS. Send for Bulletin No. 150 on non-ferrous parts; Bulletin No. 151 covering parts of Meehanite Metal, Ni-Resist and special alloy irons.

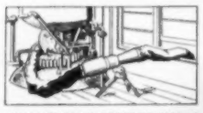
SHENANGO-PENN MOLD COMPANY
790 West Third St. Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO
ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

BREVITY—Identify by IEN - 3921 If you write the maker

Ventilate CONFINED Places with Vano Design "C" Ventilator-Exhauster

WELDING FUMES are here removed by this Vano Ventilator-Exhauster.



FUMES FROM A REACTOR KETTLE are here withdrawn by tripod-mounted Vano Ventilator-Exhauster. Note non-collapsible suction tubing and discharge tubing.

Ideal for withdrawing welding fumes from confined places or directly from the welding rod. Provides greater safety, greater comfort for workers . . . leads to greater work efficiency. Can be furnished with 8" suction inlet to which 8" non-collapsible suction tubing may be attached . . . or provided with multiple inlet nozzles for 5", 4" and 3" suction hose.

Other types are also available for supplying fresh air to men working in confined places, such as tanks, manholes, drums, boilers and ship-holds.

For full details on Coppus Vano Design "C" Ventilator-Exhauster write COPPUS ENGINEERING CORPORATION, 144 Park Avenue, Worcester 2, Mass.

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

BREVITY—Identify by IEN - 3922 If you write the maker

AT YOUR FINGERTIPS

A must for your bench — Herberg Drill Size, Pin Gages. Unlimited time and cost saving advantages in center and location finding, hole or slot gaging.

- Held Accurate to +.0001 —.0000
- Concentric tapered to fit holes .0012 smaller than gage size.
- 1½" in length for easy insertion
- Highest quality oil hardened tool steel
- In convenient indexed stand for quick selection

Letter sets of 52 gages, A-Z in pairs
Fraction sets of 60 gages, 3/64" to 1/2" in steps of 1/64" in pairs
Number sets of 120 gages, 1 to 60 in pairs
Individual gages in stock
Extra stands available

All Items Stocked for Immediate Delivery

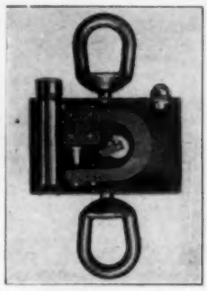
FROM THE Herberg GAGE COMPANY
21 STAPLES ST., BRIDGEPORT, CONN.

Quantity
..... Letter Sets @ $45. Please Rush checked items and literature to
..... Fraction Sets @ $50. Company .....
..... Number Sets @ $90. Address .....
..... Single gages @ $ 1. Name .....
..... Stand alone @ $10. Title .....

BREVITY—Identify by IEN - 3923 If you write the maker

SIGNALING . . Hoist protector gives visual-audible overload signal

Source: W. C. DILLON & CO.
1419-23 S. Circle Ave., Forest Park, Ill.



Overload Signal is a new battery-operated device for application between a suspension hook and the top hook of a hoist or for use between the hoist hook and a load. It mounts a U-shaped load bar and sensitive switch in a battery circuit that includes a signal lamp and horn or buzzer. The signal circuit remains open as long as the hoist is loaded within safe limits. Overload results in closing the circuit to sound the horn and light the lamp. Load limit can be set at any point between 500 and 10,000 lbs. by turning a screw. Power is supplied by two flashlight cells.

Assembly is in a steel box measuring 8¼ in. in width by 5 in. in height. Overall height from one load ring to the other is 14¾ inches. Weight is 11½ pounds. Opening in the rings will clear a 1½ by 2-in. hook. List price is $95.

BREVITY—Identify by IEN - 3924 If you write the maker

WRENCH . . Screw driver design, 3/16 to ½ in. socket in seven sizes

Source: BONNEY FORGE & TOOL WORKS
51 Tilghman St., Allentown, Pa.

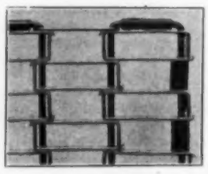
Sold singly or in sets

Hexagon sockets measuring $\frac{3}{16}$, ¼, $\frac{5}{16}$ and 11/32 in. are supplied in 6-in. overall wrench length and have a drill depth of 2¼ in. in the company's new series of seven spinner wrenches, screw-driver design with composition handles. The other three sizes, measuring ⅜, $\frac{7}{16}$, ½ in. at the hexagon socket, are 6⅝ in. in overall length and have a 5-in. drill depth. The shanks and sockets are plated.

BREVITY—Identify by IEN - 3925 If you write the maker

FLOORS . . Steel link mat traps dirt, grease and chips on floor

Source: PERFO MAT & RUBBER CO.
281 Fifth Ave., 1st Floor, New York 16, N. Y.



Openings measure ½ by 1¾ in. in this new steel-link mat. Height above the floor is ⅝ inch. The mat is made of rectangular formed parts, $\frac{1}{16}$ in. in thickness, and No. 10 connecting wires. Both are galvanized. Overall sizes range to 6 ft. in width and are in specified lengths. A brass nosing is attached to the front and back ends. The mat has been designed particularly for use in processing plants, plating rooms, machine shops, foundries where dirt, grease and chips accumulate. Sa-Fur is the trade name.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 3926 If you write the maker

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 3927 If you write the maker

SPECIALIZING IN ORIGINAL EQUIPMENT LOCKS

ILLINOIS

CABINET LOCKS

Hundreds of styles and sizes in cabinet locks for wood or metal installations available for original equipment applications.

Illinois Lock engineers are always ready to cooperate with you in working out special locking problems.

For a complete service of your next lock problem—call Illinois.

DUO LOCKS—Finest in lock quality—practically unlimited key specifications—virtually pickproof—non-duplicatable style keys.

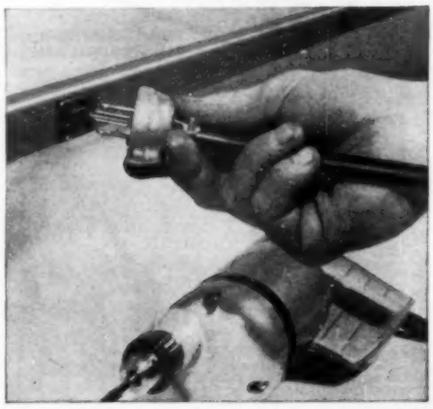
ILLINOIS LOCKS—Economy price cylinder locks—many key changes—construction avoids failure due to dirt or freezing.

ILLINOIS

THE ILLINOIS LOCK COMPANY
822 SOUTH ADA STREET • CHICAGO 7, ILLINOIS

BREVITY—Identify by IEN - 3928 If you write the maker

READY NOW!



NATIONAL ELECTRIC'S NEW GROUNDING "PLUG-IN" STRIP TYPE CF2-G

A dual-purpose, metal-clad, multi-outlet assembly . . . offering two electrical wiring systems in one!

Here it is—Permits use of grounded or ungrounded devices *from the same outlet* . . . will take either the new *Series 5200* 3-blade grounding plug or the standard 2-blade ungrounded plug . . . outlets every 6" or 18".

Listed by Underwriters' Laboratories, Inc.

UNLIMITED APPLICATIONS . . .
IN FACTORIES . . . OFFICES . . . STORES . . . HOMES . . . HOTELS . . . APARTMENTS . . . SCHOOLS . . . HOSPITALS . . . INSTITUTIONS. "Plug-In" Strip is a professional material. Consult your electrical contractor for installation. Grounding "Plug-In" Strip meets contemplated revisions in the National Electrical Code covering grounded electrical systems.

Type CF2-G Grounding "Plug-In" Strip is the quickest and easiest method of meeting grounding requirements. Write for our *free* folder "Grounding Plug-In Strip."

NATIONAL ELECTRIC PRODUCTS WIRING SYSTEMS WIRES AND CABLES

STEEL FOR PERMANENCE . . . GROUNDED FOR SAFETY

National Electric PRODUCTS CORPORATION
1352 CHAMBER OF COMMERCE BLDG., PITTSBURGH 19, PA.

BREVITY—Identify by IEN - 3930 if you write the maker

0 to 800 rpm in 8/10 second ...26 times per minute!

De Laval products at work!

Tough service? You bet! And this De Laval speed reducer takes it and likes it. This particular unit is driving a conveyor belt that automatically feeds and measures steel billets going into a shear. If your application is rough on reducers, let our power transmission engineers give you full details on our heavy duty worm and herringbone gear drives . . .

or write for Catalog GWBV-29

DE LAVAL STEAM TURBINE CO., TRENTON 8, N. J.

TURBINES • HELICAL GEARS • CENTRIFUGAL BLOWERS AND COMPRESSORS
CENTRIFUGAL PUMPS • WORM GEAR SPEED REDUCERS • IMO OIL PUMPS

DE LAVAL 50th Anniversary

BREVITY—Identify by IEN - 3931 if you write the maker

"Your product will arrive in good condition"

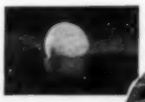
PACKED IN RUBATEX

Labels warn but do not protect. Pack your product in RUBATEX and you provide essential cushioning which assures "arrival in good condition."

RUBATEX is a closed cellular rubber composed of hundreds of thousands of individually sealed balloon-like chambers in every square inch. Each chamber retains inert nitrogen under pressure and is completely surrounded by a membrane of live rubber. This structure forms a dense resilient cushion which literally smothers impact.

RUBATEX cannot absorb moisture. It has high insulating value—is resistant to oxidation and is rot and vermin proof. It has good compressive strength and is extremely light in weight—only 4½ pounds per cubic foot.

The amazing cushioning and shock-absorbing qualities of RUBATEX closed cellular rubber recommends it as a packing material to better protect your product *all the way*. Most package applications can economically be cut from sheet stock. For further information, write for Catalog RBS-12-49, Great American Industries, Inc., RUBATEX DIVISION, BEDFORD, VIRGINIA.



Dropped from a height of more than one hundred feet, this egg bounced off a three-inch-thick pad of RUBATEX closed cellular rubber without breaking. RUBATEX absorbed and dissipated the impact shock equal to a velocity of more than sixty miles an hour.

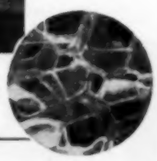


Photo-micrograph of RUBATEX closed cellular rubber shows the tiny individually sealed balloon-like chambers which retain inert nitrogen under pressure.

RUBATEX® CLOSED CELL RUBBER
For Gasketing · Cushioning · Shock Absorbing · Vibration Damping

BREVITY—Identify by IEN - 3933 if you write the maker

SOLDERING . . Carbon electrode unit heats on work contact to melt solder

Source: WASSERLEIN MFG. CO.
P. O. Box 1421-A, Joliet, Ill.

New design of the Glo-Melt resistance soldering machine, previously described IEN-2345-50, mounts a pair of brackets. They carry carbon electrodes in adjustable position on the ground and electrode terminals of the standard machine. The new arrangement is interchangeable with the original design, the bracket holders and electrodes being available as accessory items or in complete assembly with the transformer unit. The arrangement is particularly suited for work that can be brought to the electrode.

Input rating is 450 watts. A heat selector provides 24 steps of adjustment. Weight is 25 lb. and dimensions of the transformer are 7 by 7 by 7 inches.

BREVITY—Identify by IEN - 3934 if you write the maker

FASTENINGS . . Aluminum alloy rivet, ½ to 1 in., in required grip length

Source: ALUMINUM CO. OF AMERICA
670 Dept. 1, Gulf Bldg., Pittsburgh 19, Pa.

Available now for experiment

Type XB77S designates new aluminum alloy rivet for assembling heavy-duty aluminum structure. Average shear strength is 38,000 lb. per square inch. Heating range for driving is between 850 and 975 deg. F. Sizes from ½ to ⅞ in. can be driven with hand-operated pneumatic tools. Sizes from ½ to 1 in. can be squeeze driven.

BREVITY—Identify by IEN - 3935 if you write the maker

DRILLING . . Portable electric tool rates ¼ in. in steel, universal motor

Source: NEWAGE INTERNATIONAL INC.
235 E. 42nd St., 2nd Floor, New York 17, N. Y.

The company announces availability in the United States of the Desoutter English design of portable electric drill. A universal 110-volt motor is mounted in preloaded ball bearings and connected to the spindle by heat-treated helical gears. Control centers at a trigger switch. Standard equipment includes a ¼-in. key-operated Jacobs truck. The tool weighs 2½ lb. and operates at a free speed of 1,000 rpm.

Available accessories include rotary files, polishing and sanding discs, carbon-cleaning tools, wire-wheel brushes, wood bits, grinding wheels, a bench stand and a bench clamp.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3936 if you write the maker

TRY THEM FREE

SAVE 75% ON YOUR GLOVE COSTS

PLYGLOV ©Registered Trademark

*PLYGLOVS, the amazing new plastic coated cotton work glove, will outwear 10 pairs of cotton or 4 pairs of rubber gloves on comparable jobs. What's more, they are proof against acids, caustics, oils, petroleum solvents, or water. Their large size provide greater comfort and flexibility.

MAKE YOUR OWN TESTS

Write to us for a FREE pair of PLYGLOVS. Test them in your own plant, on your own job. See why we can give an unconditional guarantee and still save you up to 75 percent on your glove costs. Available in styles shown above: regular knit wrist, 2-inch cuff, palm coated knit wrist, or 5-inch gauntlet.

THE MILBURN CO.
3212 E. Woodbridge, Detroit 7, Mich.

BREVITY—Identify by IEN - 3937 if you write the maker

Cost: 37/100¢ per inch

THIS IS TYPICAL of what Allis-Chalmers Induction Heaters can do to speed up production. On job after job, these units do hardening, annealing, soldering, brazing, and heating cheaper, faster, better.

Cheaper — because so many more parts can be processed in an hour. **Faster** — because induction heating takes only seconds. **Better** — because uniform from part to part.

In addition, the Allis-Chalmers Induction Heater is versatile. By simply changing the work coil, the same heater can braze, solder, anneal, case, and through-harden.

Find out what Allis-Chalmers Induction Heaters can do to lower costs in your plant. Call your nearby A-C District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3330

ALLIS-CHALMERS A-C

BREVITY—Identify by IEN - 3938 if you write the maker

INGERSOLL-RAND PHILLIPSBURG, N. J.

uses new photographic materials that permit unique drafting short cuts

INSTEAD OF RETRACING its pencil drawings to get "ink on cloth" file copies, Ingersoll-Rand makes *Kodagraph Autopositive Cloth* prints. In this way, it obtains durable, long-lasting intermediates—with nonsmudging, dense photographic black lines—at a fraction of the cost of retracing.

INSTEAD OF RETRACING old, worn, or damaged originals, Ingersoll-Rand reproduces them on *Kodagraph Autopositive Paper,* which improves contrast, cleans up backgrounds. If the original is very bad, stains and creases reproduced on the "Autopositive" are removed with corrector fluid or razor blade. Then, a second "Autopositive" is made . . . and its detail touched up with a pencil, if necessary.

INSTEAD OF RETRACING standard elements when preparing a new pencil drawing, *Kodagraph Autopositive Film* overlays—made from standard parts drawings—are taped on the vellum. Then, the composite is reproduced on Autopositive Paper . . . and an intermediate with uniform line density obtained.

Kodagraph Autopositive Materials

"THE BIG NEW PLUS" in engineering drawing reproduction

Using Kodagraph Autopositive Paper, Cloth, or Film, you (or your local blueprinter) can produce positive photographic intermediates *directly*—without a negative step or darkroom handling . . . *at a new low cost.* Send for the new free booklet which describes them all.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

BREVITY—Identify by IEN - 3940 if you write the maker

with "FLOATING-HUB" Casters!

Damaging shocks can't reach any load carried on Bassick "Floating-Hub" Casters.

Their built-in shock absorbers smooth out rough, bumpy floors . . . cut wear and tear on loads, trucks, and the casters themselves. Wide range of sizes for wide range of materials-handling equipment. Write for literature. THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. *In Canada:* Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.

Bassick MAKING MORE KINDS OF CASTERS MAKING CASTERS DO MORE

BREVITY—Identify by IEN - 3941 if you write the maker

HALT CONCRETE FLOOR WEAR

use LAPIDOLITH* AMAZING PATENTED CHEMICAL

with BONDED GUARANTEE

This concrete dusting could have been prevented with Lapidolith

Concrete floors hardened with Lapidolith will not dust or soften! Read the amazing guarantee backed by National Surety Corporation!

Imagine a concrete floor so hard that wear makes it *smoother*, instead of rougher.

That is what Lapidolith does for a concrete floor. When applied, a patented agent—*Dynex*—soaks the Lapidolith down into the concrete. Chemical action makes the concrete up to *10 times harder*. Your floor is dust-free . . . *much* more resistant to chemicals and wear!

• PROVED OVER 50,000 TIMES

Already, over 500 *million* square feet of industrial concrete floors have been hardened with Lapidolith. And now, when we supervise the application (free), or apply under contract (at nominal cost), you get a Bonded Guarantee: *no dusting—your floor must be hardened.*

Prompt action may save the cost of replacing a worn-out concrete floor. Get full information—mail the coupon *now*.

Hardened concrete is unchanged in appearance.

Floors can be used during easy application.

MAIL FOR COMPLETE FACTS

*TRADE MARK REG. U.S. PAT. OFF.

☐ Send full facts on Lapidolith and Bonded Guarantee

☐ Make FREE floor survey, if you have a representative in my territory. (Minimum floor area 5,000 sq. ft.)

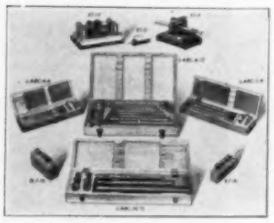
L. SONNEBORN SONS, Inc.
Building Products Division
Dept. A-4, 80 Eighth Ave., New York 11

NAME _____
FIRM _____
STREET _____
CITY _____ STATE _____

BREVITY—Identify by IEN - 3943 if you write the maker

LATHE TOOLS . . Tool steel cutters and extension shank in boxed packages

Source: BOKUM TOOL CO.
14773-77 Wildemere Ave., Detroit 21, Mich.



The company announces new packaging in sets in wood boxes for the larger sizes of its lathe tools as shown in the illustration. Each set is designed for a given group purpose in operations such as boring, bottoming and facing, internal threading. Detail listings for each set together with prices will be supplied upon request. The cutters themselves are the company's patented form which require grinding on one face only.

BREVITY—Identify by IEN - 3944 if you write the maker

STORING . . Assembly of racks, fork lift crane and overhead tracks

Source: CHICAGO TRAMRAIL CORP.
4002 W. Washington Blvd., Chicago 24, Ill.

Company provides engineering service to make estimate

Stak-Rak is a new assembly of floor-supported or overhead-suspended crane track covering a given storage area, a traveling crane equipped with a fork-lift load carrier which also can be rotated in a horizontal plane, a required number of storage racks arranged on the sides of aisles paralleling the track and the controls for crane and carrier operation.

Loads intended for storage are picked up at either end of the crane runway, are racked to the aisle where they are to be stored, are carried along that aisle, raised as required, rotated if necessary and are deposited on the storage rack for which they are intended. Alternately any stored material can be lifted from a given rack and brought out to a delivery location. Each installation is designed to meet given requirements for type of load, weight, dimensions and storage area.

BREVITY—Identify by IEN - 3945 if you write the maker

LIGHTING . . Hand flashlight is assembled in tight rubber housing

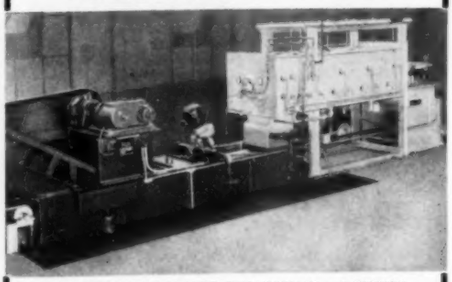
Source: LENNAN PRODUCTS INC.
229-33 W. Olive Ave., Burbank, Calif.

The rubber housing on this new flashlight protects the light itself and objects with which it comes in contact. Moisture cannot get inside. The unit cannot be broken by dropping it. The lamp can be focused to produce a spot or a wide angle beam. Two and three-cell sizes are available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3946 if you write the maker

HEAT TREAT AS A CONTINUOUS PROCESS



This AGF No. 166 RECIPROCATING FURNACE and QUENCH TANK has a capacity of 150 to 300 lbs. of work per hour. It is only one of five standard sizes.

Use AGF RECIPROCATING FURNACES for heat treating of bearings, screws, tools, lock-washers, springs, pens and a wide variety of products. Clean hardening, annealing, case-hardening by the AGF "Ni-Carbing" process, normalizing and many other controlled atmosphere processes can be accomplished most efficiently.

Write for Bulletins 815A and 820

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

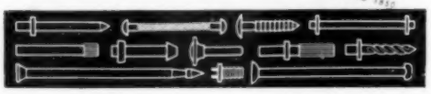
BREVITY—Identify by IEN - 3947 if you write the maker

WRITE FOR FREE fastener catalog

A complete, comprehensive handbook on cold-headed nails, rivets, screws and other special fasteners. Check on ways to improve your assembly cost-wise, appearance-wise and from a standpoint of maximum effectiveness at minimum cost. One hundred years of experience are at your service. Write for price quotations or for suggestions on the redesigning of your present assembly.

JOHN HASSALL, INC.
132 Clay Street, Brooklyn 22, New York

Hassall ESTABLISHED 1857



BREVITY—Identify by IEN - 3948 if you write the maker

WEATHERHEAD Reusable Hose Ends AND HEAVY DUTY HOSE *permit quick make-up of flexible lines from stock*

No longer need design changes make flexible hose line inventories obsolete. Make up what you need to any length to meet every pressure demand—from standard hose and *Weatherhead All-Steel REUSABLE HOSE ENDS.*

1. Hold hex of body (right) in vise. Turn hose into body (left-hand thread) until end of hose barely bottoms in end fitting.

2. Lubricate the insert (left) and the inside of the hose end with oil. Thread insert into body.

3. Tighten the insert until the hex of the insert shoulders on the body. (Body has left-hand thread so that tightening effects seal both inside and outside of hose.)

Quick and easy—any length; meets every pressure demand; low, medium, medium-high and high. Figure for yourself the inventory savings when you simply stock random lengths of hose plus the proper sizes of REUSABLE ENDS.

***WRITE FOR DETAILS*—get new catalog No. H-1451A. Address The Weatherhead Company, Dept. F-1, 300 East 131st Street, Cleveland 8, Ohio.**

FIRST IN HYDRAULIC CONNECTIONS
The Mark of Quality
WEATHERHEAD
Plants at Cleveland, Ohio; Angola and Columbia City, Indiana; and St. Thomas, Ontario

BREVITY—Identify by IEN - 3950 If you write the maker

Strap Calculator. Write for your free copy.

A manufacturer of welding rod required that the beginning of the coil be quickly inserted in automatic equipment. Notice how this problem was easily solved.

Your "problem" too may be easily solved.

Write direct or consult your telephone directory for the name of your local A. J. Gerrard representative.

STEEL STRAPPING

A. J. Gerrard & Co.

1950 Hawthorne Blvd., Melrose Park, Ill. (Chicago Suburb)

BREVITY—Identify by IEN - 3951 If you write the maker

GRAY-MILLS

PUMP UNITS

Use these portable self-contained units as . . .

14 Standard Models

Coolant Systems for Machine Tools.

"Stand-bys" in case built-in pumps fail.

Die or Stock Lubricators on Punch Presses.

Special uses: Circulating, Transferring and Applying Liquids.

In a matter of minutes you can connect a Gray-Mills Portable Pump Unit to any machine and assure a continuous, controlled flow of coolant or other liquid. Units are complete with containers, motor driven pumps with filters, hose, control valves and flexible metal nozzles.

GEAR AND CENTRIFUGAL PUMPS

Volumes to 43 GPM—Pressures to 50 PSI—5-12-38 gallon containers.

Send for catalog to

GRAYMILLS CORPORATION

2009 Ridge Ave., Evanston, Ill.

BREVITY—Identify by IEN - 3952 If you write the maker

Instead of this

BETTER BUY BERNZ

Hottest, Handiest Torch **FOR ANY JOB!**

A mighty mite for man-size jobs. Weighs only 2½ lbs., burns in any position, any time, even at minus 40° F. Complete with pencil flame and utility burners. Slick-as-a-whistle orifice cleans in 30 seconds. Inexpensive cartridge refill at any LP dealer's. BETTER BUY BERNZ.

◆ Liquified Petroleum "Always Reliable"

◆ Burns up to 11 hours *Since 1876*

Patent Pending

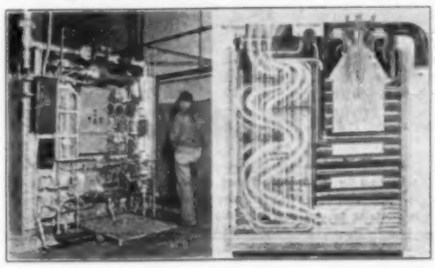
OTTO BERNZ

Otto Bernz Co.
280 Lyell Ave. Rochester 8, N. Y.
Please send me more information at once about the handy LP torch.
Name.....
Address.....
.....
My supplier is.....

BREVITY—Identify by IEN - 3953 If you write the maker

BOILER . . Self-contained assembly, water tube design, oil and gas fired

Source: COMBUSTION ENGINEERING-SUPERHEATER INC. 200 Madison Ave., 17th Floor, New York 16, N. Y.



Water is circulated through the tube elements in this new boiler between an inlet and an outlet header by a pump and constant-speed electric motor. The flow circuit from the outlet header is through a vertical drum where water and steam are separated centrifugally and the water is returned to the inlet header. Makeup is supplied by a steam-driven pump assembled at the front of the housing to a closed heat exchanger to be preheated by the pump exhaust. From there it enters the outlet header and the steam separator where it is deaerated and joins the circulation circuit.

The tube assembly is divided into radiant and convection sections. Two burners fire vertically downward into the radiant section, one being controlled for starting by a pressure switch and electric ignition to produce sufficient heat for evaporation of 700 lb. of water per hour. Beyond this point the second burner cuts in and operates to maximum rating. At medium and heavy loads both burners are in operation. Fuel oil and air to the larger burner are adjusted by the combustion control in accordance with load demands. Combustion air is supplied by a blower and is regulated by a damper with control at the fuel oil pressure, which is controlled in turn by the steam pressure.

Range is between 80 and 180 developed bhp. with steam capacities from 2,800 to 6,000 lb. per hour based on feed water at 212 deg. F. and 100 lb. pressure. Operating pressure is maximum at 300 pounds. The largest boiler with 6,000-lb. rating measures about 7 ft. in length by 5½ ft. in width by 7 ft. in height. A complete assembly includes the boiler in its insulated steel housing on a structural base, the feed water pump and control, the fuel equipment and control, the combustion control and required safety devices, the forced-draft blower, safety valves, circulating pump, standard auxiliaries.

BREVITY—Identify by IEN - 3954 If you write the maker

LUBRICATING . . Sulphurized oils for use in metal cutting operations

Source: GULF OIL CORP. 352 SB, Gulf Bldg., Pittsburgh 30, Pa.

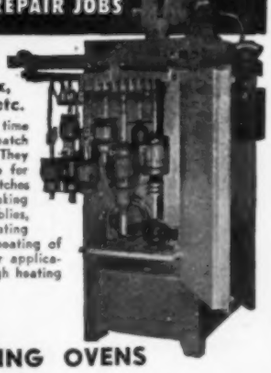
55 gal. drums and tank cars

Lasupar and Electro are two recently-improved metal-cutting lubricants, both with high active sulphur content. The former, Lasupar, contains lard oil in addition to the sulphur and is recommended for heavy-duty machine operations where fine finishes are a prime consideration. The Electro is intended for heavy-duty machining work on carbon and alloy steels and on tough non-ferrous metals.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3955 If you write the maker

50% FASTER BAKING ON REPAIR JOBS



Ideal for Synthetic Films, Dulux, Lacquer, Enamel, etc.

You can often cut baking time up to 50% with Despatch R S Batch Type Ovens. They are extremely adaptable for finish baking of small batches such as armatures; for baking paints on grills, assemblies, etc.; for drying, dehydrating or core baking; for preheating of plastics, and many other applications where fast, thorough heating is required.

DESPATCH
R S Batch Type
FINISH BAKING OVENS

They're shipped fully erected and do not require an engineer to set them up. Gas or oil fired, very economical, with working range from 200° to 500° F. Automatic heat control for desired uniform temperature. Sizes from 11 to 90 cu. ft. capacity, all easy to load and unload. When writing for literature, kindly tell us what type of work you have.

Write for Bulletin on R S Ovens.

DESPATCH OVEN CO. Established in 1902

Manufacturers of ovens for: Paint Finishing, Dehydrating, Curing, All Industrial and Laboratory Applications

337 DESPATCH BLDG., MINNEAPOLIS 14, MINNESOTA

BREVITY—Identify by IEN - 3956 If you write the maker

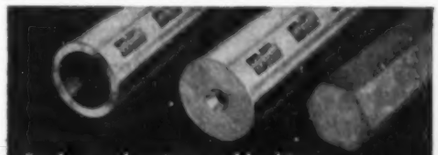
UNIVERSAL DRILL BUSHINGS

Universal Drill Bushings with superhoned bores have been the first choice of industry since the founder of Universal Engineering Co. originated standard drill bushings nearly 30 years ago. Available in standard and special sizes to speed and simplify your jig drilling at greatly reduced tool breakage costs. Complete stock of standard bushings available for immediate shipment. Write for complete information.

UNIVERSAL ENGINEERING CO.

FRANKENMUTH 6, MICHIGAN

BREVITY—Identify by IEN - 3957 If you write the maker



For bronze bearings and bushings . . .

THIS BRONZE ALLOY IS JUST WHAT YOU'RE LOOKING FOR!

N-B-M "Tiger" Bronze is the ONE bronze alloy with ALL these features:

Wear-Resistant—Has the right balance between bronze matrix and lead. *Lasts longer.*

Anti-Frictional—Low coefficient of friction helps prevent shaft seizure. *Saves power.*

Shock-Resistant, Embeddable—Stands up under heavy loads, yet embeds grit and dirt. *Protects the shaft.*

Easy To Machine—With speeds as high as 3000 F. P. M. *Reduces machining time.*

All Popular Sizes—As-cast or machined cored and solids, or as-cast hexagons, in 13" lengths.

Direct-to-you shipments cut costs!

Try "Tiger Bronze" on your next order.
Write for new, low prices and free data booklet.

NBM

AMERICAN Brake Shoe COMPANY — NATIONAL BEARING DIVISION

BREVITY—Identify by IEN - 3958 If you write the maker

HANSEN - the Tacker with 1001 Uses

BOAT seats and life-preserver units are put together in a fraction of time formerly required—with the Hansen Model T-2 Tacker—for Lee L. Woodward Sons Co., Furniture manufacturers, Owosso, Mich.

Tacker is more efficient. Provides neater longer-holding seat covers. Saves 6c. per seat cover over previous method.

In all types of industries, Hansen is proving itself a faster, neater, better way to fasten. Thirty-six models. 80 staple sizes. Submit sample or sketch, with your problem.

HANSEN

A. L. HANSEN MFG. CO.

5051 RAVENSWOOD AVE. CHICAGO 40, ILL.

BREVITY—Identify by IEN - 3959 If you write the maker

Now More Positive Protection than Ever Before

with the New FLEX-A-FOAM FILTER MASK

Newly designed for maximum comfort and efficiency, it's easier to breathe through and talk through than an ordinary pocket handkerchief... yet filters non-toxic dusts as small as 1/25000 of an inch!

- Extremely light in weight—just one ounce complete.
- Self-adjusting to every face size—no interference with eye glasses.
- Simple sturdy design—only four interlocking parts.
- Only respirator made with long-lasting washable filter—outwears throw-away type as much as 100 to 1.

Sample $1.40 postpaid

Write for new descriptive folder

Dust Protection your workers will welcome and Wear

FLEX-A-FOAM FILTER MASK

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

BREVITY—Identify by IEN - 3960 If you write the maker

Even unskilled operators can speed cutting time with a

WALKER-TURNER 16" BAND SAW

To meet today's demand for accurate and faster production, put the new Walker-Turner 16" Band Saw to work in your shop. Any operator, even unskilled labor, can quickly learn to handle these metal and woodworking machines. Built to simplify cutting operations, they're *fast, accurate, safe, easy to handle.*

The automatic Power Feed, a patented Walker-Turner feature, insures protection against overloading the blade—maintains a pre-set feeding pressure for sharper cutting—affords longer blade life.

Find out more about this practical way to increase output while reducing production costs.

Ask your distributor for full information about this and other Walker-Turner Power Tools for metal, plastic and woodworking operations. Or mail coupon today for complete catalog.

SOLD ONLY THROUGH AUTHORIZED DEALERS

WALKER-TURNER

KEARNEY AND TRECKER CORPORATION PLAINFIELD, N. J.

DRILL PRESSES • JOINTERS
TABLE SAWS • BAND SAWS
BELT and DISC SURFACERS
JIG SAWS • RADIAL SAWS
LATHES • TILTING ARBOR SAWS

Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE4, Plainfield, N. J.
Please send me the new Walker-Turner Machine Catalog.
Name .....
Title .....
Company .....
Address .....
City ..... Zone ..... State .....

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

BATTERIES . . "Exide Ironclad" batteries for motive-power service; construction high spots, standard types, service records. Bulletin 5161, 12 pages. Electric Storage Battery Co., Allegheny Ave. & 19th, Philadelphia 32, Pa. **IEN-0356**

BENDING . . Portable tools for bending pipe and tube, hydraulic and mechanical types; operation, examples of work, standard assemblies and kits. Folder AM-7, 4 pages. Tal Bender Inc., 415-19 N. Water St., Milwaukee 2, Wis. **IEN-0357**

BURRING . . Machine to finish ends of tube and rod; drawings and description on burring, chamfering, facing, boring, other operations possible. "End Finishing," 4 pages. Pines Engineering Co., 638 Walnut St., Aurora, Ill. **IEN-0358**

CAPACITORS . . Bypass and feed-through units to suppress rf. interference from motor vehicles; drawings, ratings. Bulletin NB-140, 4 pages. Cornell-Dubilier Electric Corp., 1000 Hamilton Blvd., South Plainfield, N. J. **IEN-0359**

CARS . . Low-headroom car to transport mine personnel into and away from working areas; dimensions and capacities on four standard types. "Saf-T-Car," 4 pages. Irwin Foundry & Mine Car Co., 1950 Sensenich St., Irwin, Pa. **IEN-0360**

CASTINGS . . Centrifugal castings in Meehanite Metal, Ni-Resist and special iron alloys; notes on metals handled, examples of typical parts produced. Bulletin 151, 6 pages. Shenango-Penn Mold Co., 1933-37 W. 3rd St., Dover, Ohio **IEN-0361**

CENTERS . . Ball-bearing machine center; sizes and list prices, details on the bearings employed, also carbide-tipped units. Bulletin 483-R, 4 pages. Ready Tool Co., 552-56 Iranistan Ave., Bridgeport 5, Conn. **IEN-0362**

CHUCKS . . Independent, self-centering, combination, two-jaw, collet types; types, dimensions, ratings, list prices, also a power wrench, parts lists. Catalog 64, 94 pages. Cushman Chuck Co., 800 Windsor St., Hartford 2, Conn. **IEN-0363**

CLEANING . . "Actusol" concentrate material to mix with solvent and water to clean metal parts; mixing instructions, nine examples of application. Bulletin 1864, 4 pages. DuBois Co., 1118-22 W. Front St., Cincinnati 3, Ohio **IEN-0364**

COMPRESSORS . . Single and two-stage models; features and specifications on tank-mounted assemblies with ½ to 15-hp. motors or engine drive. "Automatic Units," 12 pages. Quincy Compressor Co., 51 Quincy St., Quincy, Ill. **IEN-0365**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3962 If you write the maker

TIMING TESTS PROVE A BRUNING DRAFTING MACHINE CAN INCREASE DRAFTING SPEED 40%. IT COMBINES T-SQUARE, TRIANGLES, STRAIGHTEDGE, PROTRACTOR AND SCALES. IT SAVES TIME WASTED IN HANDLING TOOLS—MAKES ACCURACY AUTOMATIC.

WRITE TODAY FOR BOOKLET A-1055

BRUNING

CHARLES BRUNING COMPANY, INC.

Dept. N-41, 100 Reade Street • New York 13, N. Y.

BREVITY—Identify by IEN - 3963 If you write the maker

Speed Way Speed Sander

Motor Driven 3/16" Orbital Motion

$34.50

Sands Cleans Smooths Polishes

Three 4½" x 6½" coverings cut from standard 9" x 11" abrasion sheet.

Makes a hundred tedious jobs fast and easy. Will sand to the bare wood or metal, featheredge, or smooth and polish to a "piano finish." Powerful direct-connect, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears, nor gear-housing to collect grit and dust. Sealed ball-bearing thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord.

WRITE FOR CIRCULAR

Speed Way MANUFACTURING CO.

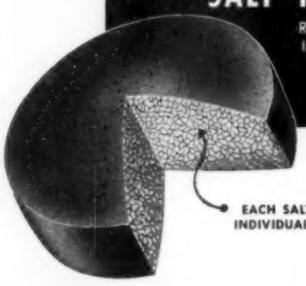
1885 So. 52nd Avenue • Cicero 50, Illinois

BREVITY—Identify by IEN - 3964 If you write the maker

New PEP-UP IMPREGNATED SALT TABLETS

RELEASE SALT IMMEDIATELY

(Not Enteric Coated)



EACH SALT CRYSTAL INDIVIDUALLY COATED

DISPENSER

PEP-UP Impregnated Salt Tablets come to you in sanitary, factory-sealed dispensers at no extra cost.

- Will not cause salt sickness or nausea
- No delay in getting salt into system
- Starts dissolving immediately
- Dissolves completely in about 100 minutes
- Withstands rough handling and storage without deterioration
- Meets Government Specification No. SS-S-31C

Order Now—Be Prepared. Write for literature and prices.

UNITED STATES SAFETY SERVICE CO.

KANSAS CITY 6, MO. • BRANCHES IN PRINCIPAL INDUSTRIAL CITIES

BREVITY—Identify by IEN - 3965 If you write the maker

A COMPLETELY INSULATED SPLICE in 3 simple steps

A PERFECT WIRE TERMINATION in 1 easy operation

ALL installed with 1 'pres-SURE-tool'

BUCHANAN Electrical Products Corporation HILLSIDE, N. J.

WRITE FOR CATALOG Y 105

BREVITY—Identify by IEN - 3966 If you write the maker

AIR-MITE AIR CYLINDERS

SINGLE ACTING DOUBLE ACTING

Worth Their Weight in GOLDen Man-Hours

SAVE time, spoilage, cost . . . speed production . . . reduce fatigue . . . on all drilling, reaming, tapping and processing jobs. Available in 1", 1½", 2½", 3", 4" and 5" diameters; stroke length optional. Single or double action; all mountings.

Write for complete catalog of Air Cylinders and Air Arbor Presses.

AIRMITE 2653-M West Lake Chicago 12, Illinois

BREVITY—Identify by IEN - 3967 If you write the maker

Newark Wire Cloth COMPANY

342 VERONA AVENUE • NEWARK 4, N. J.

NEW LITERATURE—Continued

"Brief reviews for busy readers"

CONNECTORS . . Type-RS sealed electric connectors for hermetic components such as relays; description, models, dimensions. Bulletin RS-1, 4 pages. Cannon Electric Development Co., 3207 Humboldt St., Los Angeles 31, Calif. **IEN-0366**

CONNECTORS . . "Sta-Kon" pressure-assembled electric terminals and connectors; types, sizes, dimensions, installation tools. Bulletin 61, letterhead request, 40 pages. Thomas & Betts Co., 34-38 Butler St., Elizabeth 1, N. J. **IEN-0367**

CONTRACT WORK . . In stampings and sheet-metal fabrication; picture examples such as special tool-carrying cases, notes on shop facilities available. Folder 1050, 4 pages. Central Stamping & Mfg. Co., 51 Central Ave., Polo, Ill. **IEN-0368**

CONTRACT WORK . . In sheet steel, alloy and light structural fabrication; description of facilities by operation such as bending, shearing, machining. Bulletin 503, 16 pages. Day Co., 808-12 Third Ave., N. E., Minneapolis 13, Minn. **IEN-0369**

CONTRACT WORK . . Illustrated facilities for making metal parts based on rings; examples of rings, wheels, rims, forgings, other products. Folder, "Products for War," 6 pages. Dresser Mfg. Div., 102 Fisher Ave., Bradford, Pa. **IEN-0370**

CONTRACT WORK . . Illustrated facilities and examples of work by a company that makes an electronic dictating machine and that has made radar units. Brochure, 11 sheets. Gray Mfg. Co., 14-18 Arbor St., Hartford 1, Conn. **IEN-0371**

CONTRACT WORK . . Cold-rolled aluminum and steel shapes, sub-assemblies for aircraft, porcelain enamel; personnel, facilities, examples of work. "War Facilities Brochure," 72 pages. Kawneer Co., 712-16 N. Front, Niles, Mich. **IEN-0372**

CONTRACT WORK . . West-Coast facilities for stampings, hardware, rubber parts, plastics, weatherstripping; illustrated equipment, war products. Bulletin, 8 pages. Standard Products Co., 6114-18 Cherry Ave., Long Beach, Calif. **IEN-0373**

CONTRACT WORK . . For tools, dies, jigs, short-run stampings and machining; illustrated machine facilities and an equipment list. Mailing folder, 6 pages. Universal Instruments Corp., 137-41 E. Frederick, Binghamton, N. Y. **IEN-0374**

CONTROLS . . Automatic equipment for temperature, flow, pressure, liquid level, humidity; specifications, schematic diagrams, accessories. Catalog 8304, 60 pages. Brown Instruments Div., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-0375**

COUNTING . . "Mercury" electric counters for light-duty service in equipment; data on reset and non-reset designs, dimensions. Bulletin SEC-11, 4 pages. Production Instrument Co., 700-10 W. Jackson Blvd., Chicago 6, Ill. **IEN-0376**

CONVEYING . . "Styl-O-Matic" chain conveyors for bottles, cans, containers, jars; data on straight, curved, unscrambling, accumulating units. Bulletin ST-1, 24 pages. Island Equipment Corp., 27-03 Bridge Pl., Long Island City 1, N. Y. **IEN-0377**

CONVEYING . . Type S-815 flat-top conveyor chain for container, parts, package handling; general features, engineering data, available sprockets. Folder 2344, 4 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-0378**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 3969 If you write the maker

A NEWS ADVERTISEMENT BY HONAN-CRANE CORP.

COOLANT CLARIFICATION . . . Magnets remove over 98% of all contamination

New Houdaille Magnetic Clarifier, for machine tools such as wet surface grinders, milling machines, gear shapers, etc., removes over 98% of contaminants from liquid coolants (mineral oils and soluble oil solutions)—provides continuous flow of clean coolant to the work or machine sump for re-use. Compact unit measures 22⅝" long by 16½" high by 15⅞" wide.

Removal of contaminants accomplished by permanent ring magnets enclosed in revolving non-magnetic cylinder. Circular steel discs, end pieces of the cylinder acting as magnetic poles, seal off magnet cores to prevent fluid from contacting magnets. Design provides 360° constant magnetic attraction.

Turbulent flow of coolant beneath cylinder keeps metallic particles in suspension until attracted to metallic poles. Abrasive non-magnetic particles entrained with magnetized contaminants are collected by non-magnetic wiper trough, fitted to magnetic cylinder. Friction eliminated as trough does not rub on cylinder—using instead accumulation of magnetized particles to wipe mass of contamination as cylinder revolves past trough.

Unit rated at 20 GPM. Provisions in design prevent spillage when operated above rated capacity. Operates on 1/12 hp. 60 cycle 110 volt single phase motor. Requires no maintenance—provides longer tool and wheel life, better finishes, fewer rejects and less downtime.

HONAN-CRANE CORPORATION
subsidiary of HOUDAILLE-HERSHEY CORP.
802 Wabash Avenue, Lebanon, Indiana

BREVITY—Identify by IEN - 3970 If you write the maker

Saves $40,000 a year

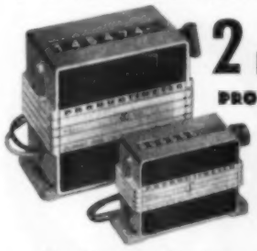
with General Electric Capacitors

A West Coast chemical plant reports that 3780-kvar of G-E capacitors, engineered into the plant's power distribution system, are saving $40,000 on power costs alone. That's a return of better than 50% a year on the investment!

Have you checked your power costs recently? If you have a power factor or demand clause in your power contract you, too, may be able to effect considerable savings. Your authorized G-E agent or distributor, or nearest G-E sales office, can help you check. Or write for GEA-5167—"A Way to Cut Power Costs." *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 3971 If you write the maker



2 NEW ELECTRIC PRODUCTIMETERS

"C5" and "Y" ELECTRIC PRODUCTIMETERS The answer to all electric counting requirements

Two Companion Counters . . . Two Sizes . . . Hi-Speed . . . Accurate . . . Long Life . . . Totally Enclosed

Speeds of 1000 counts per minute. Both counters give maximum readability. Design fits all mounting conditions . . . panel mounting or base mounting. Hardened steel working parts for long life and dependability.

New type case for compactness, rigidity, and protection against dust and moisture conditions. Operate accurately over wide current fluctuations.

Write for "New Electrics" Bulletin

DURANT MANUFACTURING CO.
1930 N. Buffum St. Milwaukee 1, Wis.
130 Orange St. Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS SINCE 1879 *Count Everything*

BREVITY—Identify by IEN - 3972 If you write the maker

send for CATALOG

INCREASE PRODUCTION with air
If your present source of air is overloaded install small units in each department needing air. Supplies air at higher pressures or saves running large machine when the department works overtime. Completely packaged units of power . . . Wayne Compressors are available from ⅓ H.P. to 10 H.P. Ask for catalog.

INDUSTRIAL LIFTS • HOSE REELS

THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA • TORONTO, CANADA

BREVITY—Identify by IEN - 3973 if you write the maker

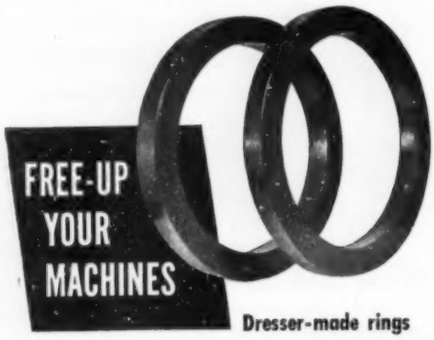
OZITE all-hair felt has an outstanding record for solving problems of cushioning, padding, thermal and sound insulation. Our research and engineering staff are ready to give you competent assistance should you have any problems in these or similar applications.

OZITE felt in standard weights and thicknesses meets most production requirements. Special weights and thicknesses; as well as paper, cloth, or foil backings and stitched reinforcements may be had in production quantities.

Write today for OZITE bulletin No. 1500. If you desire samples for test, simply send a brief description of your application.

AMERICAN HAIR & FELT CO.
Dept. X-14, Merchandise Mart Chicago 54, Illinois

BREVITY—Identify by IEN - 3974 if you write the maker



Dresser-made rings save you machining and material

Dresser's special method makes ring-shaped metal parts with important reductions in raw material and finishing. Sizes 4" to 72" diam.—up to 16 square-inch cross section.

Send for descriptive "RINGS FOLDER"

DRESSER RINGS
Dresser Manufacturing Division, 109 Fisher Ave., Bradford, Pa.
(One of the Dresser Industries)

BREVITY—Identify by IEN - 3975 if you write the maker

You Might REVOLUTIONIZE your business too!

The cost of distributing millions of magazines was cut 13% last year . . . caused a revolution in the industry. A UNITABLE did the trick and paid for itself in nine weeks. This up-to-the-minute belt conveyor could be the answer to your distribution, assembly, or handling problem.

For the whole story, mail the COUPON.

CONVEYOR SPECIALTY COMPANY INC.
35 Newport Ave.
North Quincy 71, Mass.

Please mail me your latest UNITABLE Bulletin.
Name _____
Company _____
Address _____
_____

NEW LITERATURE—Continued

"Alphabetical to facilitate finding"

CONVEYING . . Belt, roller and wheel types; condensed data, list prices on standard assemblies of power and gravity units, accessory equipment. Price List, 6 pages. Metzgar Co., 417 Douglas St., N. W., Grand Rapids 4, Mich. **IEN-0379**

CRUSHING . . Jaw-type and rotary machines, also pulverizing, mixing, separating, conveying equipment; condensed catalog information. "Miniature Bulletin," 68 pages. Sturtevant Mill Co., 4 Harrison Square, Boston 22, Mass. **IEN-0380**

CUTTING . . Counterbore cutters, countersinks, core drills; dimensional drawings, size tables, suggestions on use, also drivers, holders. Bulletin 5-50, 8 pages. Scully-Jones & Co., 1936 S. Rockwell St., Chicago 8, Ill. **IEN-0381**

DISTILLING . . Evaporator-distiller units to produce drinking, process or boiler-feed water; flow diagram, operation, sizes. "Evaporator-Distillers," 8 pages. Maxim Silencer Co., 83-87 Homestead Ave., Hartford 1, Conn. **IEN-0382**

DRAFTING . . Pencils for drafting, blueprint marking, color marking, also erasers, crayons, refill leads, penholders; types, sizes, colors. 1951 Catalog, 56 pages. Eberhard Faber Pencil Co., 35-39 Greenpoint Ave., Brooklyn 22, N.Y. **IEN-0383**

DRILLING . . Light-duty drill press in bench and floor models, one to four spindles; catalog data on standard units, tapping and other accessories. "Series 1000," 4 pages. Boice-Crane Co., 926 Central Ave., Toledo 6, Ohio. **IEN-0384**

DRILLING . . Portable electric tools including drills, saws, sanders; condensed data on a line of models with list prices, accessories. Catalog PT-43-1-51, 4 pages. Cummins Portable Tools, 4738-42 N. Ravenswood, Chicago 40, Ill. **IEN-0385**

DRILLING . . "Meyco" carbide-insert drill jig bushings; drawings and dimensions on fixed-renewable, slip-renewable, headless-liner types, lock screws. Bulletin B-3, 6 pages. W. F. Meyers Co., 1019 Fourteenth St., Bedford, Ind. **IEN-0386**

DRILLING . . Portable electric drills, grinders, saws, sanders, hammers; specifications, accessories, list prices. Pocket Catalog 875-MR-2, 32 pages. Milwaukee Electric Tool Corp., 5314-18 W. State St., Milwaukee 8, Wis. **IEN-0387**

DRIVES . . "Ucon Hydrolube" water-base hydraulic fluids; viscosity-temperature curves, fire resistance, suggestions on use. Booklet F-7380-A, 12 pages. Carbide & Carbon Chemicals Div., 30 E. 42nd St., Room 1213, New York 17, N. Y. **IEN-0388**

DRIVES . . No. 25 roller chain with ½-in. pitch and ⅛-in. width; specifications, list prices, hp. selection table, sprockets, uses. Bulletin 50-8, 4 pages. Chain Belt Co., Baldwin-Duckworth Div., 358 Plainfield St., Springfield 2, Mass. **IEN-0389**

DRIVES . . Magnetic-particle clutch for servo use with vacuum-tube actuation; performance curves and data on models to ¼ hp., applications. "FM Torque Controllers," 16 pages. Duncan & Bayley, 783-87 Hertel Ave., Buffalo 7, N.Y. **IEN-0390**

DRIVES . . Variable-speed transmission, standard and motor-driven; catalog data on units to 87 hp., dimensions, hp. capacities, controls. Bulletin G-500, 12 pages. Reeves Pulley Co., 800 N. Wilson St., Columbus, Indiana **IEN-0391**

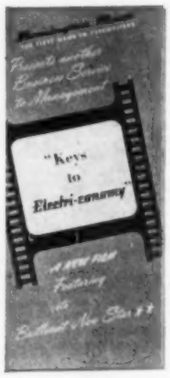
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3976 if you write the maker

A NEWS ADVERTISEMENT BY REMINGTON RAND INC.

"KEYS TO ELECTRI-CONOMY"

. . . folder describes new film about Remington Rand's new electric typewriter — THE ELECTRI-CONOMY



Here is a folder chock full of information about "Keys to Electri-conomy" . . . the new Remington Rand film featuring the magnificent ELECTRI-CONOMY. The film shows how a typical business office learned to slash office typing costs and increase typing production through use of this amazing new electric typewriter.

Folder contains actual scenes from the film and also explains how you can show this movie to your staff *without cost or obligation*. Executives, office managers, clerical and secretarial groups will find "Keys to Electri-conomy" an interesting, fast moving story typifying today's office cost problems and their solutions. A copy of this valuable folder may be obtained by writing directly to the publisher: Remington Rand Inc., Room 2029, 315 Fourth Ave., New York 10, N. Y. or by using the reader's service form herein.

REMINGTON RAND INC.
Business Machines and Supplies Division, Room 2029
315 Fourth Ave., New York 10, N. Y.

BREVITY—Identify by IEN - 3977 if you write the maker

THIS ELEVATOR BUCKET CANNOT FAIL TO EMPTY

ON EVERY TRIP!

PEKAY Self-Cleaning **BUCKETS** *can't* retain Sand-Coal-Gravel or other granular materials, even if close-packed. Separately mounted Stripper-Plate *must* push up and out when it starts over pulley radius . . . gives irresistible leverage to dislodge and sweep out bucket contents. **CONTROLLED-CAPACITY DELIVERY . . . MORE MATERIAL AT SAME OR FASTER BELT SPEEDS** . . . . *Easy to Install . . Saves Belts . . Cuts Maintenance.* **THOUSANDS NOW IN USE.**

★*Send for prices today—Quick delivery—(Give present bucket size)*

PEKAY MACHINE & ENGINEERING CO.
100 N. LASALLE ST. • CHICAGO 2, ILLINOIS

BREVITY—Identify by IEN - 3978 if you write the maker

NEW...

Extremely sensitive
PRESSURE & VACUUM
Switches

The new Type SB pressure and vacuum switches are for use in applications in which close on-off differentials and absolutely consistent maintenance of cut-in and cut-out settings are essential in the control of pressure or vacuum. Available are two pressure models and two vacuum models. The Pressure Switches have adjustable ranges from 0-15 psi and adjustable on-off differential from .1" wc-10" wc. They may be furnished as calibrated, micrometer type or uncalibrated for screw driver adjustment.

Electrical ratings at 125/250 V AC between 1200 watts and pilot duty depending on differential. The Vacuum Switches offer adjustable ranges from 30"-0" hg vac with adjustable on-off differential from .1" wc-10" wc. Furnished as calibrated micrometer type or uncalibrated with screw driver adjustment. Electrical ratings of both models 1200 watts at 125/250 V AC.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

Special models available for requirements not included in the specifications above.

Write for new bulletin 4926 P giving complete details today.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 3979 if you write the maker

REG. U.S. PAT. OFF.
HY-PRO TAPS

For High Production

HY-PRO precision taps produce consistently more threaded pieces to lower your tapping costs. Their extra hardness and durability result in longer life, greater accuracy, more wear between sharpenings.

COMMERCIAL • PRECISION
SPECIAL • HIGH SPEED STEEL
GROUND THREAD TAPS

Order thru your Distributor

A Subsidiary of Continental Screw Co.

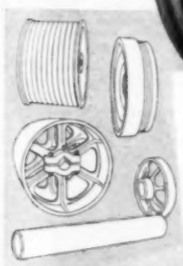
HY-PRO TOOL CO.
New Bedford, Massachusetts, U. S. A.

BREVITY—Identify by IEN - 3980 If you write the maker

PYOTT

for SPECIAL SIZE ROUND CASTINGS

MADE FROM STOCK PATTERNS 2" TO 144" SIZE RANGE



Pulleys, Flywheels, Sheaves, Gear Blanks, Capstans, Rolls, Drums, Etc.

Just send Pyott a rough sketch of the special size casting you want, including dimensions. Pyott foundry skill and stock patterns will insure quality and save you time and money. Write now, for the PYOTT SPECIAL SIZE CASTINGS FOLDER.

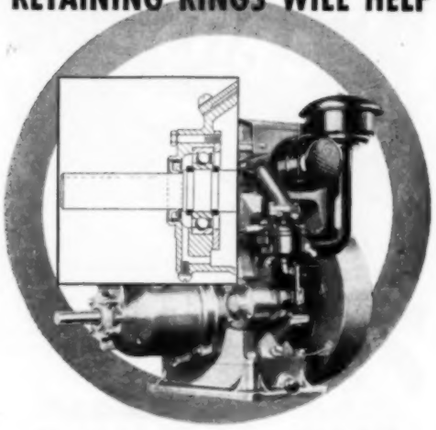
PYOTT FOUNDRY & MACHINE CO.
326 NORTH SANGAMON STREET • CHICAGO 7, ILLINOIS

Flat Belt Pulleys . . . V-Belt Sheaves . . . Quee-Dee Flat Belt Pulleys . . . V-Belts . . . Gears . . . Couplings . . . Sprockets . . . Flywheels

BREVITY—Identify by IEN - 3981 If you write the maker

SAVE WHEREVER YOU CAN!

RETAINING RINGS WILL HELP



These inexpensive, efficient artificial shoulders save metal and money on Wisconsin air cooled heavy duty engines.

And in addition to saving money and metal, retaining rings save many costly hours in assembly time. Instead of the former wasteful practice of cutting down large shafts, you can redesign to groove smaller shafts and use these high grade steel rings. In your housings, too, rings will save money and improve your products, your machines and your profits.

Every product—metal, wooden or plastic—and every machine should be examined now to see where shoulders and collars can be redesigned to effect great savings by the use of steel retaining rings.

Let us show you how they can do an efficient job for you on your shafts or in your housings.

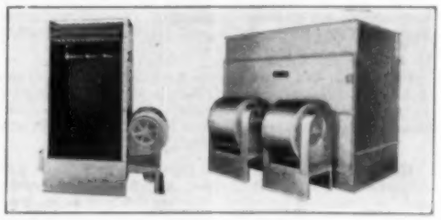
Write today for booklets on many types of National Retaining Rings.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN

BREVITY—Identify by IEN - 3983 If you write the maker

REFRIGERATING . . Cooling tower absorbs heat from condensing water

Source: BINKS MFG. CO.
3122 Carroll Ave., Chicago 12, Ill.



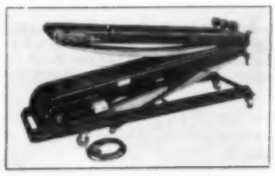
Cooling air is blown in near the base of this new Dry-Fan cooling tower for upward movement. Condensing water to be cooled is pumped through spray nozzles in a manifold near the pump. Air and water move in counterflow direction, the air upward for exhaust through eliminator baffles at the top of the assembly. Cooled water collects in the bottom for return to the condenser. The tower is designed primarily for outdoor use, but can be employed inside with suitable exhaust-duct connections at the top.

Series 2-B is a single-blower design available in 9 sizes with capacity ranging from 3 to 30 ton of refrigeration. The smallest unit measures 2 by 2 by 6 feet. The largest measures 6 by 6 by 7½ feet. Series 2-BB employs two double-inlet blowers and is available in four sizes with capacity for 30 to 60 ton of refrigeration. Sizes range from 4½ by 9 by 7¼ ft. to 6½ by 11 by 7½ feet. Both are equipped with the company's Rotojet clog-proof nozzles that produce a fine spray for efficient heat transfer.

BREVITY—Identify by IEN - 3984 If you write the maker

CONVEYING . . Portable belt assembly folds for transportation between sites

Source: SEEDBURO EQUIPMENT CO.
7006 Converse Bldg., Chicago 6, Ill.



Five sizes with overall length at 10 to 20 ft. are included in a line of portable inclined belt conveyors, initially designed for single-industry use. The conveyors are available now to handle bags, bundles, boxes or cases in any application where portability, adjustable incline and general-duty requirements are important factors. Total load capacity is 300 pounds. Standard operating speed is 65 fpm. and weights are 500 to 800 pounds.

Equipment includes a Ruff-Top belt with rounded cleats at 60-in. intervals and a ¾-hp. ball-bearing, single-phase, 60-cycle ac. motor, except on the 20-ft. assembly, which is standard with a 1-hp. motor.

Operation can be specified on 110/220-volt or a 220/440-volt circuit. Included also is a heavy-duty drum switch for reversing control and a 20-ft. extension cord and plug. Elevation to a maximum angle of 55 deg. with horizontal is by hand-operated hydraulic pump. In horizontal position the 14-in. belt is 16 in. above the floor line. List price for the 20-ft. assembly is $797 in standard design.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3985 If you write the maker

BREVITY—Identify by IEN - 3986 If you write the maker

ALL-PURPOSE SLINGS

with new Roebling Tapered Sleeve Splice . . . stronger . . . cost less!

NEW ROEBLING All-Purpose Slings with the Tapered Sleeve Splice are delivered ready for the job. The unique rolled loops and tapered sleeve attachments develop the full strength of the rope ...cost less than ordinary tucked splices...save "splicing your own".

Made of Roebling "Blue Center" Steel Wire Rope, All-Purpose Slings are unsurpassed for toughness and dependability...flexible and easy to handle...come in all standard lengths and sizes. Send for full information and for the free "Sling Data Book." John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 3987 If you write the maker

General Plate Truflex Thermostat Metals hold the line against rising costs, by giving you the exact performance requirements desired. Advanced General Plate production methods insure positive consistency in tolerances, grain structure, expansion, hardness, etc. This insures maximum uniformity of materials which reduces costly rejects and guarantees highest quality performance.

Truflex Thermostat metals are available in a complete line of combinations to meet all applications in temperature range, electrical resistance, size, shape and cost. They can be had in raw stock in sheets, strip and coils from .020" to 8" widths . . . or as completely fabricated parts ready for assembly into your products.

Write for information or engineering assistance.

Other General Plate Products include — Precious to base metal laminations . . . Base metal laminations . . . Alcupate (copper and aluminum) . . . silver solders . . . Laminated contacts, buttons, rivets . . . Platinum fabrication-refining . . . Age hardening Manganese Alloy 720.

GENERAL PLATE
Division of Metals and Controls Corporation
704 FOREST STREET, ATTLEBORO, MASSACHUSETTS

BREVITY—Identify by IEN - 3988 If you write the maker

World's Most Widely Used

PORTABLE DIAL SCALE

This portable Toledo controls costs in a great variety of applications. Sturdily built to maintain precise weighing accuracy. Rapid automatic weight indication. Wide choice of dials. Capacities to 1600 lbs. Send for bulletin 2025. Toledo Scale Company, Toledo 1, Ohio.

Portable Scale for weighing at bench level heights. Shown with adjustable wheeled stand and with a packing house pan.

TOLEDO

HEADQUARTERS FOR SCALES

BREVITY—Identify by IEN - 3989 if you write the maker

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

BREVITY—Identify by IEN - 3990 if you write the maker

ELLIOTT TWIN STRAINERS
TYPE "A"

Valve screw threads sealed in and protected

The disc is attached to a long hollow shaft or housing, internally threaded for the valve screw. Both ends of the housing are at all times within the packing glands. The liquid being strained cannot touch the valve screw inside the housing, enabling its lubrication and preventing corrosion.

The valve screw, rotating between fixed bearings, at no time projects beyond the unit.

Get all the story. Write for the Type A Twin Strainer Bulletin.

SIZES FROM 1/2" UP—125 to 250 lb. PRESSURES

A-311

ELLIOTT COMPANY
Accessories Dept., JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 3991 if you write the maker

SEE—TEST—FEEL the LATEST Developments in GASKET, WASHER and SEALING materials

FREE GUIDE brings you over 50 ACTUAL SAMPLES!

If you manufacture products employing gaskets, washers, seals, sound-deadening materials, dampening materials, dielectrics, etc., this GUIDE TO BETTER SEALING will be sent to you without cost or obligation.

The GUIDE contains 50 actual samples of the most commonly-used sealing materials, which Fel-Pro supplies to such leading companies as American Can, Baldwin Locomotive, DuPont, General Electric, Packard, Pure Oil, Quaker Oats, Standard Oil, Western Electric and Westinghouse.

TEST THEM YOURSELF
FEL-PRO'S GUIDE TO BETTER SEALING makes it possible for you to closely inspect a wide range of materials, test them under all kinds of conditions in your own plant, treat them chemically or make any other tests to help you decide which are best suited for your particular needs.

GIVES FULL SPECIFICATIONS
Among the sample materials contained in this SEALING GUIDE are such newly-developed materials as the revolutionary "Fel-Pro 131". This material is particularly suited to automotive engine parts, chassis parts, pumps, high compression flanges, etc., because of its low swell (just 2%) and exceptional durometer hardness of up to 80 plus or minus 5. Complete specifications are given for each of the 50 material samples, including durometer readings, sheet and roll sizes, applications, etc.

PARTIAL CONTENTS
Felbestos 100 for manifold and hot-spot applications!
Metallic Gasket Materials!
Fel-Pro 131 the new low-cost rubber!
Kearnpack treated to maintain uniformity!
Fel-Pak for water, oil, etc., connections!
Dark-Karro for use between metal and non-metal surfaces!

SEND TODAY
To get your FREE copy of the FEL-PRO GUIDE TO BETTER SEALING without obligation, just write your name and title on your company letterhead and mail to: Felt Products Mfg. Co., 1523 Carroll Avenue, Chicago 7, Illinois.

LOOK TO FEL-PRO for the LATEST in sealing materials

NEW LITERATURE—Continued

"Address given so you can write direct"

DRIVES . . Marine transmission including variable-slip hydraulic coupling, forward and reverse gears; sectional views, hydraulic circuit diagram. Bulletin 161, 12 pages. Twin Disc Clutch Co., 1401 Racine St., Racine, Wis. **IEN-0392**

DRIVES . . Gear-type flexible shaft coupling; illustrated description on construction points, sectional drawings to show range of designs. "Eliminating Shut-Downs," 6 pages. John Waldron Corp., 50 River Road, New Brunswick, N. J. **IEN-0393**

DUST COLLECTING . . Unit-type assemblies to use with dust-producing machinery; types, sizes, ratings, illustrated uses on a range of equipment. Catalog 605-2, 40 pages. Aget-Detroit Co., 401 Main St., Ann Arbor, Mich. **IEN-0394**

ELECTRONIC PRODUCTS . . Phototubes, cathode-ray, uhf. and other special electronic tubes; characteristics, ratings, uses. Booklet CRPS-102-A, 15 cents, 20 pages. Radio Corp. of America, 413-17 S. 5th St., Harrison, N. J. **IEN-0395**

ENGINEERING . . Data sheet forms in 3¾ by 6¾-in. size; description and list prices on individual sheets, looseleaf notebooks, data books. 1951 Price List, 32 pages. Lefax, Sansom & Ninth Sts., Philadelphia 7, Pa. **IEN-0396**

FASTENINGS . . Expansion bolts and masonry anchors, toggle bolts, star and carbide rock drills, other fasteners; sizes, list prices, dimensions. Pocket Bulletin 140, 16 pages. U. S. Expansion Bolt Co., 600 State St., York, Pa. **IEN-0397**

FLOORS . . "Quick-Floor" ready-mixed material to patch or resurface industrial floor surfaces; illustrated application steps. Mailing folder, "Your Floor Like New," 4 pages. Dura-Tred Co., 355 Central Park Blvd., Chicago 24, Ill. **IEN-0398**

FLOORS . . Steel floor grating, stair treads, concrete floor armor; illustrated summary on types, properties, load ratings, standard sizes, uses. Folder, 4 pages. William F. Klemp Co., 6632-36 S. Melvina Ave., Chicago 38, Ill. **IEN-0399**

FURNITURE . . Steel work benches, stools, chairs, shop desks, mailing tables, drawing and print cabinets, bench legs; data summaries. Catalog H, 26 pages. Angle Steel Stool Co., 51 Industrial St., Plainwell, Mich. **IEN-0400**

GAGES . . Inclined and vertical-tube draft gages; detail specifications, ranges, list prices and instructions for use including data tables. Bulletin 109, 20 pages. Ellison Draft Gage Co., 212-16 W. Kinzie St., Chicago 10, Ill. **IEN-0401**

GENERATORS . . "Tri-Clad" synchronous generators to 50 kva., 60 and 400 cycles; illustrated review of construction features, data on four types. Bulletin GEA-4570, 4 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. **IEN-0402**

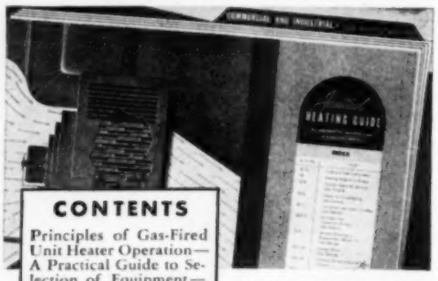
GLASS . . Lime crystal and borosilicate heat-resisting types; properties, molding methods, surface treatments, design recommendations. "Industrial Glass," 8 pages. Dunbar Glass Corp., 23-27 Hugh Bldg., Dunbar, W. Va. **IEN-0403**

GRINDING . . Flexible-shaft machines in sizes to 1/12 hp.; specifications on standard models, also handpieces, shafts, accessories, speed control. Catalog 180, 8 pages. Foredom Electric Co., 25-29 Park Place, New York 7, N. Y. **IEN-0404**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3992 if you write the maker

VALUABLE GUIDE ON PRACTICAL USE OF UNIT HEATERS for industrial installations



CONTENTS
Principles of Gas-Fired Unit Heater Operation—A Practical Guide to Selection of Equipment—Typical Floor Plan Layouts for Commercial and Industrial Installations—Use of Automatic Controls — Specifications — Combining Heat with Air Conditioning.

WRITE TODAY FOR FREE COPY

SURFACE COMBUSTION CORPORATION, DEPT. D, TOLEDO, OHIO

Janitrol
GAS-FIRED UNIT HEATERS

BREVITY—Identify by IEN - 3993 if you write the maker

For Faster, Smoother Painting

EDWARD E. ROBINSON
MASTER PAINTER BRUSHES

SPEED up maintenance or production painting by using Robinson's *TIPPED* nylon Master Painter Brushes. Every nylon filament is *TIPPED* on Robinson's newly developed nylon *TIPPING* machine assuring superior paint pick up and smoother, faster lay down by every Robinson *TIPPED* Nylon Master Painter brush.

Robinson's Master Painter Brushes made of Pure Bristle, Bristle-horsehair, or *TIPPED* Nylon, mixed to performance proved formulas are available through Distributors, Paint and Oil Dealers and Hardware stores. Catalogue mailed on request.

EDWARD E. ROBINSON
INCORPORATED
95 PARK AVENUE · NUTLEY 10, N. J.

BREVITY—Identify by IEN - 3994 if you write the maker

Specifications		
Model	Size	Bit Capacity
60	0	1/8 to 5/16
61	1	3/16 to 3/8
62	2	1/4 to 1/2
64	4	5/16 to 3/8

With 15° or parallel cutter channel, left or right hand

this Clark ADJUSTABLE TOOL HOLDER is the best you've ever used ... AND HERE'S WHY

★ 10 TIMES THE GRIP! Exclusive Vise-Grip Jaw exerts equalized pressure over *full* length of cutter channel—runs right to cutting edge and hugs bit so it can't rock, slip, sag or break...permits *faster feeds* and *deeper cuts!*

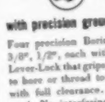
★ HOLDS ALL SIZES AND SHAPES! One Clark Adjustable Tool Holder takes 4 or more sizes of square, round, undersize or narrow tool bits for cutting-off or special forming operations.

★ SAVES MONEY! Cuts set-up time...uses up short bits of stub ends.

★ FOR CARBIDE TOOLS AND BORING BARS! Available with 15° or parallel cutter channel, either left or right hand.

CALL YOUR CLARK CUTTER JOBBER TODAY, OR WRITE FOR CATALOG IE-4

COMPLETE SET OF 4



Clark LEVER-LOCK BORING BARS with precision ground replaceable bits.

Four precision Boring Bars, 3/16", 1/4", 3/8", 1/2", each with the exclusive Clark Lever-Lock that grips tool bit at extreme end to bore or thread to bottom of blind hole with full clearance. Of heat-treated alloy steel. No interfering set screws or bolts. Complete in plastic box with four precision ground thread tool bits and four boring bits.

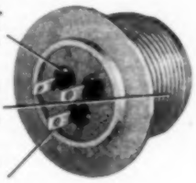
SPECIFICATIONS			
Dimensions of Boring Bars		Size of Cutters Round	Used with Clark Tool Holders Nos.
Diam.	Lgth.		
3/16	5	3/32	P60R, P61D
1/4	6	1/8	P60R, P61R, P63R
3/8	7	3/16	P61R, P63R, P64R
1/2	8	1/4	P63R, P64R

Robert H. Clark Company
CLARK CUTTERS
9230 SANTA MONICA BLVD · BEVERLY HILLS · CALIFORNIA

BREVITY—Identify by IEN - 3998 if you write the maker

CANNON PLUGS | hermetically sealed

Cannon Type "GS" (glass sealed) connectors are hermetically sealed for use on position indicators, tachometers, and other instruments that must be sealed to avoid moisture condensation resulting from sudden altitude change or other causes.



Glass beads fused to shell and contact, have approximately same coefficient of expansion as steel shell, insulate contact and provide perfect seal.

Shell machined from cold rolled steel. Hot tin dip is standard finish. GS02 is receptacle type; GS06 plug with coupling nut.

Contacts machined from cold rolled steel. Flat eyelet at wire end is standard. Solder cup type contact available on special order.

Request Bulletin No. GS-2 for engineering data.

CANNON ELECTRIC

3209 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

BREVITY—Identify by IEN - 3997 if you write the maker

INCREASE PRODUCTION with Commander PRODUCTION TOOLS

Adjustable MULTI-DRILL

★ Drills Up to 8 Holes At 1 Stroke
★ Adjustable to Any Hole Pattern
★ Fits Any Drill Press

You can drill 2 to 8 holes at one stroke of a MULTI-DRILL equipped drill press. Instantly and easily adjusted to any hole pattern . . . compact in design and ruggedly built for years of service, thousands of MULTI-DRILLS are cutting costs and increasing output up to 800% wherever metal, wood or plastics are drilled.

Commander TAPPER

★ 1 Tapper Handles Taps #0 to ¾"
★ Automatically Sensitive... Any Operator Can Do Precision Tapping
★ Fits ANY Drill Press

The Tapper that "Thinks for the Operator"

Commander Tappers "think for the operator"—automatically stop when taps are dull, overloaded, or when they strike bottom in blind hole tapping—permit faster tapping, better work, even with inexperienced operators. Torque control provides positive tap protection from #0 to ¾" . . . spring clutch eliminates slippage, assures smooth, quiet, easy operation.

New DRILL CHIP BREAKER

ORDINARY CHIPS

CHIP BREAKER CHIPS

Get these COMMANDER DRILL CHIP BREAKER benefits now:

- Faster Drilling
- Deeper Holes
- Better Holes
- Longer Drill Life
- Safer, Cleaner Work
- REDUCED DRILLING COSTS

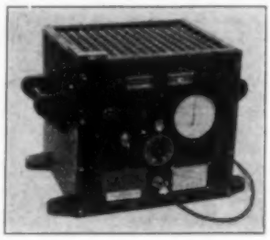
Write for illustrated Circulars on Commander Production Tools. Your nearby Commander Distributor carries the full line—write for his name.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO 24, ILL.

BREVITY—Identify by IEN - 3999 if you write the maker

TESTING . . Dynamometer reads prime mover torque, ½ to 10 hp.

Source: AVION INSTRUMENT CORP.
8 E. 23rd St., Room 9, New York 10, N. Y.



Magnetorque trade names new dynamometer consisting of two concentric cylinders, the outer being rotated by the prime mover and the inner being restrained by calibrated retaining springs. A magnetic field, varied by a rheostat, links the two cylinders through iron particles in the gap between the cylinders. The inner member provides indication of the applied torque. A correction factor for windage loss is included in the calibration chart on the front panel. Assembly is in a metal cabinet measuring 12 by 11 by 11 inches. Weight is 130 pounds.

Application is at any speed between 0 and 6,000 rpm. and the unit is calibrated in the range between 1,500 and 6,000 rpm. Accuracy is within 5 per cent of full load. Front-panel instruments show speed in rpm. and torque in ft. lb. taken from dial readings referred to the chart. Loading is indicated by substituting these figures in a formula in which horsepower is equal to rpm. multiplied by the torque and divided by 5,250 as a factor.

The instrument has capacity to dissipate 4 hp. continuously at 3,600 rpm. It will measure torque equivalent to 10 hp. at 4,000 rpm. if the duty cycle maintains the operating temperature below 220 deg. C. Additional loading can be handled if external cooling is provided. A cable is supplied to connect to a 110-volt, 60-cycle line to neutralize residual magnetism. Operating accessories include a rheostat to adjust excitation voltage and a flexible shaft to couple low-speed loads.

BREVITY—Identify by IEN - 4000 if you write the maker

CLEANING . . Floor mop made of DuPont cellulose sponge yarn

Source: E. I. du PONT de NEMOURS & CO.
2502 Nemours Bldg., Wilmington 98, Del.

New application for the company's cellulose sponge yarn is in mops to clean various types of floors. The company is prepared to name the manufacturers of the completed mops, particularly for use in the industrial field.

Porous sponge yarn forms the outer portion of the mop strands which are made of cotton. The sponge material provides absorbency while the cotton strands provide the strength required. The sponge picks up water to three or four times its dry weight. It does not scratch, leaves no streaks of dirt or lint. It can be sterilized in boiling water. It will outwear ordinary cotton-mop yarn by three to five times. Weathering has no effect on the material.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 4001 if you write the maker

TAC does what no other tool can do!

AT LAST! AN OPEN-END RATCHET WRENCH — the world's first true universal wrench. A patented design for connections on tubing, rods, piping, conduit, studs, etc. Sixty-four socket sizes from ⅜" to 4". Smallest effective ratcheting arc yet — 5° to 7½°. TAC will also do every job any ordinary ratchet wrench, will do: one TAC set replaces literally dozens of single-purpose hand tools.

makers of advanced tools for industry

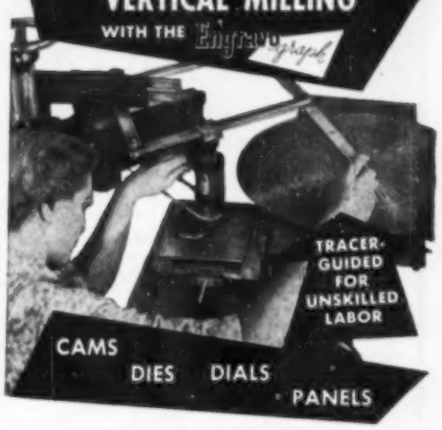
TAC

TAC is the registered trademark of

TUBING APPLIANCE CO.
2112 South Victoria • 10321 Avalon Ave. • Los Angeles, Calif.

BREVITY—Identify by IEN - 4002 if you write the maker

ENGRAVING • PROFILING VERTICAL MILLING WITH THE Engravograph



Write for literature describing:
1. Heavy Duty Engravograph (illustrated) Catalog H-23
2. Portable Engravograph — Catalog IM-23

NEW HERMES, Inc. 13-19 University Place New York 3, N. Y.

CANADA: 359 St. James St., Montreal

World's Largest Manufacturer of Portable Engraving Machines

BREVITY—Identify by IEN - 4003 if you write the maker

Highly Abrasive Materials are no threat to ROCKWOOD Ball VALVES

- LEAK PROOF SERVICE
- FULL ROUND FLOW
- EASY TO OPERATE
- NO MAINTENANCE

Foreman at Iroquois China Company, Solvay, New York, says "Rockwood Ball Valves are operated 40 times a day handling a mixture of clay and water. Each Valve has performed better, operated easier and lasted longer than any other valve we ever used."

When using the conventional type valve, the Iroquois China Company found the turbulence created in the valve would add air to the "slip" and cause pin holes in the finished product. Also, the "slip" would accumulate in the bonnet and prevent full opening and tight closing. Rockwood Ball Valves eliminate this trouble. Rockwood Ball Valves are also successfully performing on glaze operations, where a mixture of ground glass and water is used.

A valve with these qualities will give top notch performance in your plant — why not install one today and be convinced.

Available for 300 p.s.i. working pressure in all pipe sizes from ½" to 4".

Distributors in all principal cities.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 4004 if you write the maker

HERE'S YOUR Complete STEAM PLANT

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per h.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability • 17 sizes from 20 to 500 h.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details write for catalog 317.

Superior STEAM GENERATORS

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Executive Offices: Times Building, Times Square, New York 18, N. Y.

BREVITY—Identify by IEN - 4005 If you write the maker

COBURN FIRE DOOR HARDWARE

Metal clad or Kalamine doors, installed with Coburn Fire Door Hardware, reduce fire hazards, and lower insurance rates.

Coburn Fire Door Hardware is made to specifications of The National Board of Fire Underwriters and, where necessary, bear the U. L. I. label. Special sets available for single and double incline or level slide doors; single and double swing doors; vertically operated doors. All equipped with automatic self-closing devices. Write for catalog #210 showing full line of hardware, charts showing required headroom; wall space and other information.

Engineering help available without obligation.

COBURN PRODUCTS

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Engineering: 56 Sterling Street, Clinton, Massachusetts
Executive Office: 500 Fifth Avenue, New York 18, New York
Sales Offices: Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • Philadelphia
Pacific Coast — The California Wire Cloth Corporation, Oakland 6, California

BREVITY—Identify by IEN - 4006 If you write the maker

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880 FACTORY-MILL & WAREHOUSE TRUCKS

Cutting Handling Costs since 1880

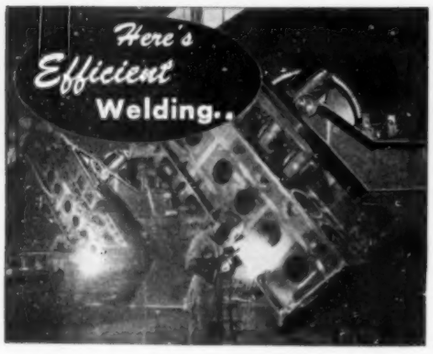
Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save — time AND money. Francis heavy duty, economical trucks feature strong iron work — hardwood frame — rigid construction. All carefully machine fitted. Steel rims or rubber tires.

WRITE TODAY for catalog and prices

Manufactured by HOOSIER FENCE CO. Inc.
DEPT. IEN 1701 E. 38th St., Indianapolis, Ind.

BREVITY—Identify by IEN - 4007 If you write the maker



When heavy, unwieldly weldments like these diesel crank cases can be quickly swung into any position so that every weld is made "downhand"—that's efficient welding.

Welders spend more time welding—do better welding at lower cost when they work with C-F Positioners because these hand and/or power operated machines reduce positioning time to a minimum. Investigate the cost saving advantages of C-F Positioners. They pay their way in any company.

Write for Bulletin WP 24 — an illustrated circular detailing the Specific Advantages of C-F Positioners.

CULLEN-FRIESTEDT CO.
1310 S. Kilbourn Chicago 23, Ill.

NEW LITERATURE—Continued

"Facts on literature about a product"

HEAT TREATING . . Combustion-type furnaces with a recirculating blower; sectional view and operating description of Radivection design. Folder, 6 pages. Standard American Engineering Co., 7851-55 W. 43rd St., Lyons, Ill. **IEN-0405**

HEAT TREATING . . Furnaces for heating and heat treating in armament production; illustrated review with notes on components handled. Folder SC-150, 8 pages. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio. **IEN-0406**

HOISTS . . "Zip-Lift" electric hoists, 250 to 2,000 lb.; two-page sectional view with descriptive captions, applications, specifications. Bulletin H-20-1, 20 pages. Harnischfeger Corp., 4402 W. National Ave., Milwaukee 14, Wis. **IEN-0407**

HOISTS . . Chain hoists, trolleys, cranes, winches, and hoist chain; construction features, sizes and ratings, instructions, list prices. Catalog 81, 92 pages. David Round & Son, Henry & Broadway, Cleveland 5, Ohio **IEN-0408**

HOSE . . For general industrial use; types, construction summaries, end views, sizes, also information on care and use of fire hose. Catalog NY-0697-F, 16 pages. New York Belting & Packing Co., 3 Market St., Passaic, N. J. **IEN-0409**

INSULATING . . Corkboard, cork covering, heat-insulating materials and insulating refractories; selection, properties, placing instructions. "Industrial Insulations," 28 pages. Armstrong Cork Co., 1012 State St., Lancaster, Pa. **IEN-0410**

INSULATING . . Acoustical and thermal materials; picture summary of available products for the defense effort and of plant facilities. Folder 76-100, 6 pages. Union Asbestos & Rubber Co., 330-34 S. Michigan Ave., Chicago 4, Ill. **IEN-0411**

JACKS . . Ratchet, screw and hydraulic types, 3 to 75 ton; selection table, models and accompanying specifications, recommended uses, examples. Bulletin 1515, 16 pages. Buda Co., 15401 S. Commercial St., Harvey, Ill. **IEN-0412**

LIGHTING . . "Abolite" incandescent floodlight equipment; types, sizes, holder ratings, illumination diagrams, recommended mounting data. Catalog 1, 88 pages. Jones Metal Products Inc., Railroad & Steward, West Lafayette, Ohio **IEN-0413**

MAGNETS . . Small permanent magnet on jointed handle to pick up ferrous parts, also a floor sweeping magnet; data on these and other tools. "Magimmick," 4 pages. Ullman Products Corp., 150-54 Prospect Ave., Brooklyn 15, N. Y. **IEN-0414**

MAGNIFYING . . Contour projector for work inspection; operating description, diagram of optical system, picture examples of use. Bulletin, "Model 2," 8 pages. Eastman Kodak Co., 341-5 State St., Rochester 4, N. Y. **IEN-0415**

METERS . . "Tong Test" ammeter to clip over an electric conductor for current measurement; models, ranges, accessories, list prices. Bulletin TT-5025, 8 pages. Columbia Electric Mfg. Co., 4517-21 Hamilton Ave., Cleveland 14, Ohio **IEN-0416**

MIXING . . Banbury mixers for rubber, plastics and other materials; design points, standard sizes, operation including flow charts, applications. Bulletin 189, 32 pages. Farrel-Birmingham Co., 146-50 Maple St., Ansonia, Conn. **IEN-0417**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 4008 If you write the maker

you name it! we'll make it in Laminated Plastic

Nameplates . . . Signs . . . Scales . . . Schematic Diagrams . . . Calculators

Production Facilities for
ONE — ONE DOZEN — ONE MILLION

We are equipped to draw, print and fabricate such products as illustrated above or other special work you may have in laminated plastic. We can handle long or short runs in "Vinylite", acetate or phenolic materials. Ideal as metal substitutes. We also have equipment for forming and drawing to irregular shapes. Highest quality and accuracy guaranteed. Write for illustrated literature.

Neat Clean Durable

ALLEGHENY PLASTICS, INC.
391 CHESTNUT ROAD SEWICKLEY, PA.

BREVITY—Identify by IEN - 4009 If you write the maker

PLYWOOD
Wood of 1001 Uses

A plywood panel for every need

Immediate Shipment from AETNA Warehouse Stocks

Millions of feet of Plywood in a complete line of sizes and grades—over 40 species . . . for immediate shipment from Aetna Plywood's Chicago and Branch Warehouses.

Your valuable time in maintaining your production and meeting your schedules can be saved in buying from Aetna's Warehouse. WHEN YOU NEED PLYWOOD FAST . . . CALL AETNA FIRST. Send in your "specs." for a quotation. Write for your free Buying Guide, the Teleply Ticker *Price List.*

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Avenue Chicago 22, Ill.
ARmitage 6-7100 Teletype: CG305

BRANCH WAREHOUSES: Grand Rapids, Indianapolis, Rockford, Ill.
SALES OFFICES: Detroit; Milwaukee and Green Bay, Wis.; Minneapolis; Richmond, Va.; Marion and West Lafayette, Ind.; Springfield, Ill.

SEE PHONE BOOK

BREVITY—Identify by IEN - 4010 If you write the maker

Need clean, even heat?

Here is pure, uniform electrical heat—radiated from a pane of glass!

Smokeless, dustless, flameless radiant heat from a paper-thin aluminum grid fused to the back of a strong, tempered glass panel.

Think of the places in your production process—in your *product itself*—where heating or drying can be done faster, easier, safer, cheaper with this remarkable new unit. Want to know more? Send today for our technical folder. Write to Dept. IEN-4.

CROSS SECTION
Grid
Glass
Terminals

RA-GRID HEATER PLATE
9 sizes: Ranging from 6 x 14" to 16 x 28"
Thickness: ¼"
Heat: Up to 300°F.
Voltage: 230 max. for 16 x 24" plates
Connections: Two terminals for connection of wires

RA-GRID HEATER PLATES
BLUE RIDGE GLASS CORPORATION • KINGSPORT, TENN.

BREVITY—Identify by IEN - 4011 If you write the maker

Try this industrial finish that resists ACIDS, ALKALI, ABRASION, HEAT, THERMAL SHOCK!

A TYPICAL APPLICATION

Special Offer

If finish on your product or components involves any or all of the factors listed above, ERIE may have a porcelain enamel finish that exactly fits your needs. Noted for its durability, porcelain enamel can be formulated to provide specific service characteristics. Tell us your problem, today.

Write

Erie INDUSTRIAL TYPE PORCELAIN ENAMEL

THE Erie ENAMELING COMPANY
INDUSTRIAL DIVISION, ERIE, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 4012 if you write the maker ▼

In Electrical Specialties—

SORENG is the word for finest quality

Soreng electrical specialties for appliances, machines and other equipment are designed, engineered and built completely in our own extensive plants. That's your assurance of *finest* quality—in performance, in materials, in workmanship. Your assurance, too, of complete satisfaction through years of efficient, low-cost, trouble-free service.

A few of the many Soreng-engineered specialties include:—

- **TT Type Solenoids—for more work per unit volume.**
- **Switches—hundreds of various types for automobiles, refrigerators, washers, other home appliances, machine tools, and many others.**
- **Terminals—in a wide range of types that speed production and cut costs.**

Every Soreng component is backed by more than 25 years experience, engineering leadership, and precision manufacturing. You can depend on Soreng because *Soreng means finest quality electrical specialties!* For engineering help with *your* problems, write—without obligation—to Dept. A 14.

Specialists In Electrical Specialties

SORENG MANUFACTURING CORPORATION
9555 Eden Ave., Schiller Park, Ill. (Chicago Suburb)
Plants: Schiller Park, Ill. • Fremont, Ohio

▼ BREVITY—Identify by IEN - 4013 if you write the maker ▼

looking for machine tools?

Armstrong-Blum Manufacturing Co.
Brown & Sharpe Mfg. Co.
Bryant Chucking Grinder Co.
The Bullard Company
The Cincinnati Milling Machine Co.
Ex-Cell-O Corporation
Fray Machine Tool Company
Gisholt Machine Company
Gleason Works
Greenlee Bros. & Co.
The Heald Machine Company
Jones & Lamson Machine Company
Kent-Owens Machine Company
W. B. Knight Machinery Co.
Landis Tool Company
The R. K. LeBlond Machine Tool Co.
Micromatic Hone Corporation
The Monarch Machine Tool Company
The Oilgear Company
Sheldon Machine Co. Inc.
Sunstrand Machine Tool Company
The Warner & Swasey Company

Reach for Sweet's . . . All these manufacturers' catalogs—containing comprehensive information on machine tools, attachments and accessories—are instantly available in Section 1 of your Sweet's File for the Mechanical Industries.

The other sections of this Sweet's File contain additional catalogs covering a wide range of materials and equipment . . . useful and up-to-date information on product forms, characteristics, performance and use.

This grouping of manufacturers' catalogs, in sections according to products or use of products, is made for your convenience, so that you can more readily compare one product with another. Indexes of manufacturers, products and trade names lead you quickly and easily to the catalogs you are looking for.

Sweet's is working constantly to get more manufacturers to send you their catalogs in this easy-to-use form. If you fail to find what you want, please tell us.

Sweet's catalog service
DIVISION OF F. W. DODGE CORPORATION
119 West 40th Street New York 18, N. Y.

▼ BREVITY—Identify by IEN - 4015 if you write the maker ▼

CONSTRUCTION . . Tractor shovel, 60 hp. engine, 1 1/4 cu. yd. bucket

Source: FRANK G. HOUGH CO.
841 7th St., Libertyville, Ill.

Model HY is a new assembly in the company's Payloader line of tractor-mounted shovels. It is driven by a 60-hp. gasoline or diesel engine as specified. The engine is mounted at the rear over the drive wheels, back and below the operator who rides in a position where he has a clear view in all directions. The transmission provides four speeds in forward and reverse directions to a maximum of 29 miles per hour. The drive includes bucket-crowding action with tip-back movement to prevent spilling. Steering is augmented by power.

The bucket can be operated at a digging angle between 1 and 6 degrees. Maximum dumping clearance is a bit over 8 feet above the ground. Bucket movements are hydraulic.

▼ BREVITY—Identify by IEN - 4016 if you write the maker ▼

PLASTIC . . Polyvinyl resin to extrude, calender, mold, fabricate

Source: B. F. GOODRICH CHEMICAL CO.
322-26 Rose Bldg., Cleveland 15, Ohio

Technical data upon request

Geon 404 is a new polyvinyl resin that does not require any plasticizer to make it suitable for processing by extruding, calendering or molding. It can be made into sheet, rod and tubing. Sheet materials can be joined by hot-gas torches. Tanks can be fabricated to handle corrosives in unsupported form or can be made as a lining in metal tanks. The sheet can be deep drawn and various fabricated forms can be converted into products such as trays, buckets, funnels, containers. It is characterized by flexural strength, resistance to cold flow, warpage, wear. It is available in transparent and opaque form and in a range of colors.

▼ BREVITY—Identify by IEN - 4017 if you write the maker ▼

HANDLING . . Tilting cradle holds 5 gal. can for safe pouring

Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntingdon St., Philadelphia 32, Pa.

Easy-Pour Tilter No. 15 is a new steel cradle that takes a standard 5-gal. container to permit tilting it to pour the contents safely. Parts are riveted or welded. List price is about $5.00 for the new unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 4018 if you write the maker ▼

NEW! ADEQUATE WIRING ANALYZER

Don't guess about electrical circuits!

The Sprague Adequate Wiring Analyzer makes it easy to prove whether or not existing wiring will carry proposed loads safely—or if it is adequate for present loads. An effective visual convincer for your customers!

Direct-reading meter shows percent voltage drop under load on 115 or 230 volt circuits. Furnished complete with connectors for convenience outlets, electric ranges, panel boards, etc. for on-the-job use.

Write for Bulletin PF-600

SPRAGUE ELECTRIC COMPANY
North Adams, Massachusetts

▼ BREVITY—Identify by IEN - 4019 if you write the maker ▼

CASTELL LOCKTITE HOLDER AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL
(black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

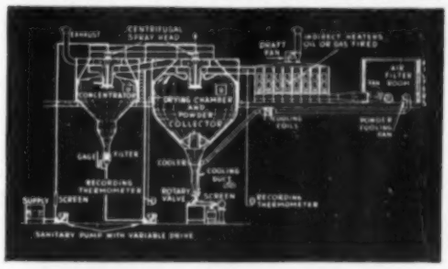
No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTELL PENCIL COMPANY INC.

▼ BREVITY—Identify by IEN - 4020 if you write the maker ▼

IMPROVED DEHYDRATING SYSTEM



Centrifugal Spray Dryer & Concentrator*

For dehydrating
- Chemicals
- Pharmaceuticals
- Blood or Blood Plasma
- Milk Products
- Eggs
- Vegetables
- Coffee and many other Products

A complete spray drying plant employing a unique centrifugal type spray head. No high pressure pump is used, and due to the design of the spray head, emulsions as well as solutions can be dried. No clogging or wearing of nozzles is caused by the suspended solids. The powder is collected and cooled in the drying chamber.

Concentrator Available Separately

Concentrator can be operated as separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

WRITE FOR FREE BOOKLET

Attractive bulletin illustrates and describes spray dryers plants; explains operation in detail, shows plan views; application photos. Send for your FREE copy today.

DRYING & CONCENTRATING CO., 332 S. Michigan Ave., Chicago, Ill.

▼ BREVITY—Identify by IEN - 4021 if you write the maker ▼

STONEWALL BOARD

FOR EXTERIOR OR INTERIOR INDUSTRIAL CONSTRUCTION

Whenever a structure or manufactured product must resist fire, extremes of weather, rust, rot, rodents, or corrosion, Ruberoid Stonewall Board may easily be the most efficient answer to the problem. Quickly applied, the big 4' x 8' boards cover more square feet with less labor. And it is strong! Asbestos fibres reinforce Portland cement, resulting in high tensile and rupture strengths. And Stonewall is easy to "work" . . . just score and break to size, or it can be cut with a square shear or a carborundum wheel.

Ruberoid Stonewall Board makes tough, durable indoor and outdoor walls and partitions — they can't rot or decay, are easily cleaned, need no painting. It is also the perfect material for ceilings, barriers, hoods, ducts, humidifiers, stove and refrigerator linings or for any purpose where moisture or heat are hazards.

The RUBEROID Co. — MORE YEARS FOR YOUR DOLLAR WITH RUBEROID BUILDING MATERIALS

Building Materials for Industry, Home, and Farm

Executive Offices: 500 Fifth Avenue, New York 18, N. Y.

▼ BREVITY—Identify by IEN - 4022 if you write the maker ▼

DAVIS NO. 300-S MOTOR OPERATED VALVE

Many industrial plants have found that the Davis No. 300-S Motor Operated Valve solves many flow control problems on process lines, zone heating, and fire emergency shut off. This valve features: Direct connection between valve stem and 2-position motor . . . 30 second timing . . . 25 watt power consumption; no stand-by consumption . . . Renewable disc . . . No internal packing . . . Visible position indicator . . . and Davis' famous tight-closing, non-sticking, single seat, pilot stem design.

No. 300-S is available in sizes from 1/2" to 6" for various service requirements. Other designs for higher pressures and larger sizes. *Bulletin on request.*

DAVIS REGULATOR CO.
2529 South Washtenaw Ave., Chicago 8, Illinois

▼ BREVITY—Identify by IEN - 4023 if you write the maker ▼

New
BOSTITCH H2B
Self-Feeding Stapling Hammer

Improved 20 Ways

Setting new high standards of durability and performance. New door makes loading quicker and easier . . . cannot be snapped open in use. Other parts improved and strengthened. Plated to resist rust. Accelerated action drives 1/4" and 3/8", or 1/2" staple all the way home into hard or gummy wood — with a single blow. One-hand operation leaves other hand free to hold work in position. Three times faster than hammer and nails. WRITE FOR BULLETIN 270. BOSTITCH, 458 Mechanic St., Westerly, Rhode Island.

BOSTITCH® fastens it better, and faster, with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

▼ BREVITY—Identify by IEN - 4024 if you write the maker ▼

use economical portable power!

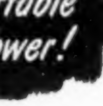
FAIRBANKS-MORSE GENERATING SETS

You can have power wherever you need it—and as much as you need—when you take along a Fairbanks-Morse portable generating set.

Fairbanks-Morse generators are available in capacities from 600 to 35,000 watts—A.C., D.C., or A.C.-D.C., according to type.

They are widely used in resorts, cabins, sawmills, farms, radio stations, camps, ranches and many other industrial and commercial enterprises.

For complete information about a generator to meet your needs, see your local Fairbanks-Morse dealer, or mail the coupon.



FAIRBANKS-MORSE, *a name worth remembering*

DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY

Fairbanks, Morse & Co.
600 S. Michigan Ave., Chicago 5, Ill.
Please send full details about your power generating sets for portable or permanent service.
Name ....
Address .... RD ....
City .... State ....

NEW LITERATURE—Continued

"Is your company's new literature included?"

MOTORS . . Three-phase squirrel-cage induction motors, 1/4 to 100 hp.; hp. rating tables by frame size and speed, drip-proof and enclosed. Bulletin 241-3050, 8 pages. Brown Boveri Corp., 19 Rector St., Rm. 1215, New York 6, N. Y. **IEN-0418**

PACKAGING . . Nailing and box-making machines; illustrated models and specifications, diagrams of nailing operations, uses. "Nailing Machines," 20 pages. Food Machy. & Chemical Corp., 3073-77 12th St., Riverside, Calif. **IEN-0419**

PIPE . . Made of flexible extruded plastic in sizes to 3 in.; properties, applications, table of chemical resistance to 75 materials. Bulletin, "Johnsonite," 8 pages. Johnson Plastic Corp., 51 Brown Road, Chagrin Falls, Ohio **IEN-0420**

PIPE FITTINGS . . Seamless welding fittings and ASA. forged steel flanges; dimensional drawings and tables, wall thicknesses. Data card, "Welding Fittings," 2 pages. Taylor Forge & Pipe Works, Box 485-A, Chicago 90, Ill. **IEN-0421**

PIPE FITTINGS . . Expansion joints in Gun-Pakt and Glan-Pakt designs for 3/4 to 24-in. pipe; construction, dimensions, list prices. Bulletin EJ-1912-51, 16 pages. Yarnall-Waring Co., 122 Mermaid Lane, Philadelphia 18, Pa. **IEN-0422**

PISTON RINGS . . Of Bakelite laminated plastic for pumps and compressors; properties, uses, sizes, also packing rings, insulating pipe fittings. Catalog 202, 12 pages. Double Seal Ring Co., 2063-67 Montgomery, Ft. Worth 7, Texas **IEN-0423**

PLASTIC MOLDING . . Hand-operated injection machine for research, testing, sampling parts to 1 oz.; two-page captioned assembly view, specifications. "Model 1," 4 pages. Van Dorn Iron Works, 2683-87 E. 79th, Cleveland 4, Ohio **IEN-0424**

PLASTICS . . Surface coatings based on vinylite resins; picture book of applications grouped by use such as corrosion proofing, sealing. Booklet J-689, 28 pages. Bakelite Div., 30 E. 42nd St., Room 1502, New York 17, N. Y. **IEN-0425**

PLASTICS . . Laminated sheet, rod, tube in a number of materials; grades, properties, sizes, product-design suggestions, fabricating data. "Laminated Plastics," 48 pages. Taylor Fibre Co., P. O. Box 470-A, Norristown, Pa. **IEN-0426**

PLASTICS . . "Micarta" laminated sheet and blanks for gears; properties, machining data, gear hp. ratings. Booklet B-4661, 16 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-0427**

PORCELAIN . . Thermocouple insulators, combustion tubes, grinding-mill lining and balls, jars and jar mills; types, dimensions. "Industrial Porcelain," 24 pages. McDanel Refractory Porcelain, 51 McDanel, Beaver Falls, Pa. **IEN-0428**

PRESS ATTACHMENTS . . Die cushions for mechanical presses, pneumatic and pneumatic-hydraulic; drawings, sizes, ratings, pipe diagrams. "Die Cushions," 20 pages. Danly Machine Specialties, 2102 S. Laramie, Chicago 50, Ill. **IEN-0429**

PRESS TOOLS . . Spiral-wound flat-spring cover to enclose leader pins and bushings on press die sets; sizes, dimensions, list prices. "Elasticone," 2 pages. Central Safety Equipment Co., 2202 E. Huntingdon, Philadelphia 25, Pa. **IEN-0430**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

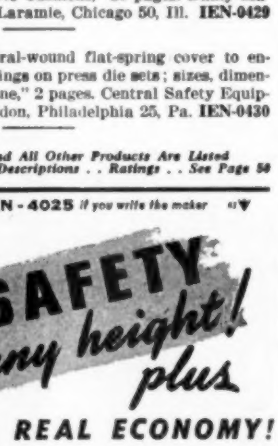
▼ BREVITY—Identify by IEN - 4025 if you write the maker ▼

Here's **JOB SAFETY** *at any height! plus* **REAL ECONOMY!**

for Painting and Overhead Work

BIL-JAX MAINTENANCE TRESTLES

Cut time and labor costs with these sturdy, all-steel trestle units. Many height variations possible, from one foot up. Ball bearing casters (locking type) make unit easy to maneuver. Patented. Underwriters' approved.



Available on sale or rental basis. Write for catalog L-4.

BIL-JAX ARCHBOLD - OHIO - U.S.A.

▼ BREVITY—Identify by IEN - 4026 if you write the maker ▼

—the perfect **WIPE-ON** for Stampings, Engravings, etc.

Lacquer-Stik SO EASY TO USE

Just RUB IN . . . WIPE OFF . . . FINISHED!

Lacquer-Stik is a highly specialized paint, compounded and prepared solely for use as a wipe-on. It is semi-solidified in stick form for quick, convenient use, but soon hardens and becomes permanent. Fill-in will expand and contract with the part and can be subjected to temperatures as high as 500° F. Will not rub off or smear when handled after application.

You'll be delighted with the attractive colors of this time-saving, labor-saving, practical and permanent wipe-on.

At your Supply House—or send 50¢ coin for sample, specifying color.

Our Research Laboratory will study your problem and make recommendations on any parts you submit.

LAKE CHEMICAL CO.
3060 W. Carroll Avenue Chicago 12, Illinois

▼ BREVITY—Identify by IEN - 4027 if you write the maker ▼

HOW TO CLEAN MOLDS OR CASTINGS ...in minutes!

REMOVE RUBBER - CARBON BLACK - PAINT - SAND PLASTICS - GREASE - AND OTHER RESIDUAL MATERIALS

Iron castings before and after salt bath desanding. Immersion at 700°F. for 10 minutes produces clean casting at right free of all surface or embedded sand.

Before After

With an Ajax Electric Salt Bath Furnace you can clean or desand molds and castings in a matter of minutes—with less labor—and far more efficiently. Sand, rubber, carbon black, grease, plastic, paint or other residual materials are quickly dissolved in the molten liquid salt—without any damage whatsoever to the base metal. As compared to old methods such as hand cleaning, shot or sand blasting or tumbling, the salt bath quickly pays for itself in labor saving alone. Best of all, and no matter how many cored holes, recesses or undercuts the molds or castings may contain, the salt bath leaves them absolutely clean, unscratched and ready for instant use. Used by leading mechanical rubber goods manufacturers, foundries and steel stamping producers.

Write for complete details!

AJAX ELECTRIC COMPANY, INC.
World's largest manufacturer of electric heat treating furnaces exclusively
900 Frankford Avenue
Philadelphia 23, Pa.

SELF-HEATING • SELF-CIRCULATING AJAX HULTGREN **ELECTRIC SALT BATH FURNACES**

BREVITY—Identify by IEN - 4029 If you write the maker

COUNTERS
WITH PRINTING RECORDERS

Count and Record Time and Quantity

Whenever you want to count objects or time intervals and get a record of the count, use a Streeter-Amet Scientific Counter.

IT COUNTS AND RECORDS:

Sheets in a bundle—Lengths in a roll of wire—Pills or packages going into a bottle or box—Intervals of time—Changes in electrical intensity—or whatever is your particular counting problem.

Write for interesting booklet SC 12

FOUNDED 1888

HI-SPEED COUNTERS
SCALES - WEIGHT RECORDERS

STREETER-AMET COMPANY
4101 N. RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

BREVITY—Identify by IEN - 4030 If you write the maker

S. J. Shanske uses SKIL Drill Model 47 on a door installation.

"SKIL Drills do the job where others fail"

reports the Chicago Manufacturing Company

EACH SKIL DRILL WORKS ON TRUCK AND TRACTOR CABS 10 HOURS A DAY ... MAKES MORE THAN 20,000 HOLES A YEAR IN STEEL 18 GAUGE OR HEAVIER.

"You need SKIL Drills when you use tools as hard as we do," they say at the Chicago Manufacturing Company. While other drills overheat, stop turning, and fail, SKIL Drills stand up under this tough work load. No breakdowns! No trouble! Just hard driving, smooth-running, continuous power . . . power to get a good fast drill job done in heavy steel door frames and assemblies . . . power to keep going on one job after another, 10 hours a day, more than 20,000 holes a year for each drill.

You can count on performance like this on your job when you use SKIL Drills. SKIL Drills are compact enough to fit into tight quarters . . . light weight, easy to work with all day without fatigue. Your nearby SKIL Distributor will be glad to give you a demonstration in your plant.

SKIL Drill—Model 47

Heavy duty. Quarter inch capacity geared chuck with key and holder (Keyless chuck available) Standard speed 1800 r.p.m. with faster or slower speeds available. Weight 3½ pounds; length 7¼ inches.

SKIL PORTABLE TOOLS

SKIL Products are made only by
SKILSAW, INC.
5033 Elston Ave., Chicago 30, Ill.
Branches in principal cities
In Canada:
66 Portland Street, Toronto, Ont.

BREVITY—Identify by IEN - 4032 If you write the maker

TESTING . . Portable gage for Shore, Rockwell, Brinell hardness

Source: A. H. CO.
51 Rockwell St., Brighton, Mich.

Rebound of a falling hammer, after striking a test surface, is the measure of hardness of test material as indicated on a scale on the front of this new portable gage. The reading is in terms of Shore hardness. The company supplies conversion scales for Rockwell "B" and "C" scales as well as for Brinell readings. The gage measures 1½ by ½ by 8¾ in. in height. It weighs about 8 oz. and lists at $25.50.

A lever at the front of the housing is raised to prepare the gage for a test and the gage is inverted to bring the hammer to the top of its stroke. Then, with the lever still raised, the gage is returned to vertical position and the lever is released. The gage is now placed vertically on a work surface and the hammer is released by pressing a trigger at the top of the housing.

The hammer strikes the work, rebounds and remains at the peak of the bounce, a mark on it registering with the scale to provide the hardness reading. Action of the hammer to remain at the top of its rebound movement is by magnetic clutch that first releases it and then moves into position to hold it at the rebound peak until the lever at the front is moved to "up" position for resetting.

BREVITY—Identify by IEN - 4033 If you write the maker

TRUCK . . Engine driven straddle unit rates 45,000 lb., travels to 33 mph.

Source: ROSS CARRIER CO.
738-42 Miller St., Benton Harbor, Mich.

Load hooks made of welded structural steel measure 104 in. in length. They are suspended from a hydraulic lift mechanism between the wheels of this new straddle truck. Distance between hooks in carrying position is 60 and 66 in. in two available widths. Maximum load height also measures 60 and 66 in. from ground to top in lowered position.

Hydraulic pressure is employed to raise a load. It serves also to swing the hooks out to clear the load after it has been deposited on the ground. The truck measures 107 and 113 in. in overall length. Height with the top up is 137 and 143 inches. Turning radius is 13½ ft. inside with a short load, 15½ ft. inside with a long load.

Drive is by a 140-hp. gasoline engine operating at 2,800 rpm. A four-speed transmission is standard equipment for movement both forward and reverse. Travel brakes are four-wheel internal expanding hydraulic design. Steering is also on the four wheels and employs hydraulic pressure. The truck is suited particularly for use in metal-working plants to carry loads of steel, bar stock, shapes and sheet.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 4034 If you write the maker

TO: *Purchasing Dept.*
FROM: *Production Dept.*

Bill, When you place orders with toolmakers please insist on V-R Carbides.

Performance counts and V-R has it.

Fred

GENUINE CARBIDES • TANTONG CAST ALLOYS
Our 21st Year
V-R
WAUKEGAN, ILLINOIS U.S.A.
VASCOLOY-RAMET CORPORATION

VASCOLOY-RAMET CORPORATION
WAUKEGAN, ILLINOIS

BREVITY—Identify by IEN - 4035 If you write the maker

PALMGREN
ANGLE VISES

HEAVY-DUTY Model

For Quick — Accurate Set-ups

PALMGREN Heavy Duty Angle Vises are built sturdy and rugged for tough, heavy jobs. They are accurately graduated in degrees, can be quickly adjusted to any angle, stay locked under severe service and save valuable hours otherwise wasted in tedious make-ready, wedging or making temporary jigs and fixtures.

Jaws are hardened and ground. Special outstanding features are the size and opening of jaws—4" Jaws open full 4", the 6" Jaws open full 6" etc., with corresponding depth of jaws. Vise can be used as ordinary vise when lowered to horizontal position. Swivel bases furnished if desired. Sizes 4", 6" and 8" Jaws and openings. Prompt deliveries.

ORDER TODAY
Be sure of IMMEDIATE DELIVERIES

Write for bulletin on complete line of PALMGREN Vises.

CHICAGO TOOL & ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS for over 25 years
8406 SOUTH CHICAGO AVENUE • • • CHICAGO

PRECISION WORK AT ANY ANGLE

BREVITY—Identify by IEN - 4036 If you write the maker

HAYNES STELLITE

Alloy Bushings Resist Severe Abrasion

These HAYNES STELLITE alloy No. 6 bushings for ship turbine control mechanism effectively resist the severe abrasive wear to which they are subjected. HAYNES STELLITE alloy has a low co-efficient of friction and is practically impervious to atmospheric corrosion. These properties make the alloy particularly useful for applications of this type.

Many types of specially designed bushings and half bushings, as well as other special machinery parts, are available in any grade of HAYNES STELLITE alloy. Write for more complete information.

HAYNES STELLITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
General Office and Works, Kokomo, Ind.

"Haynes Stellite" is a registered trade-mark of Union Carbide and Carbon Corporation.

BREVITY—Identify by IEN - 4037 If you write the maker

ARO DOES IT AGAIN!
with AIRCRAFT DRILLS

ANOTHER ARO FIRST!

1 **NEW SAFETY-LOCK TRIGGER** prevents tool starting up during drill bit changing.

2 **COMPLETE INTERCHANGEABILITY** of all parts . . . easy conversion from one model to another.

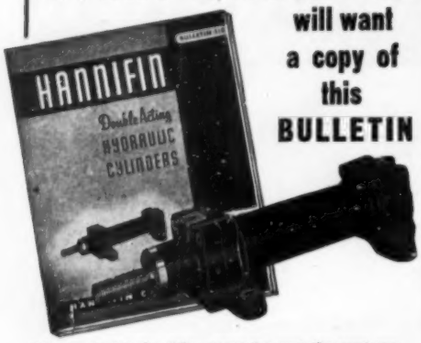
3 **SLO-SPEED, HI-TORQUE MODELS** for drilling high-tensile-strength modern metal alloys, armor plate, stainless steel. Also 3 Hi-Speed models.

Write for catalog.
The Aro Equipment Corporation, Bryan, Ohio
Aro Equipment of Canada Ltd., Toronto

ARO AIR TOOLS Also...
LUBRICATING EQUIPMENT...HYDRAULIC EQUIPMENT ...AIRCRAFT PRODUCTS...GREASE FITTINGS

BREVITY—Identify by IEN - 4038 if you write the maker

EVERY ENGINEER will want a copy of this BULLETIN

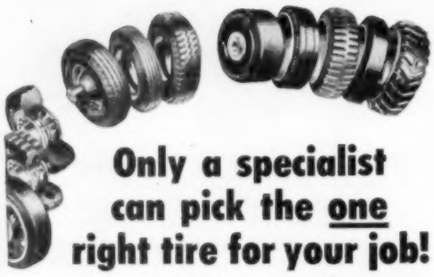


It's easy to get the right answer for even the most special jobs when you use Hannifin's new hand-book on HYDRAULIC CYLINDERS. 52 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 12 standard bore diameters, 1" to 8" . . . any length of stroke you specify . . . 11 standard mounting styles . . . standard, double end or heavy duty (2:1) piston rods . . . available with adjustable cushions . . . pressures to 1500 lbs. per sq. in. Special types to order. Write for Bulletin 110.

HANNIFIN CORPORATION
1107 S. Kilbourn Ave., Chicago 24, Ill.

BREVITY—Identify by IEN - 4039 if you write the maker.

B.F.Goodrich



Only a specialist can pick the one right tire for your job!

It takes a lot of know-how . . . of specialized training . . . to be able to decide which type, size and tread of an industrial tire is especially suitable for a specific job. In fitting the right tire to the job and in giving the right care and maintenance, you can increase industrial tire life as much as 100%. The B. F. Goodrich Tire and Wheel Analysis Plan service helps do this for you . . . and it's yours with no obligation.

Let this man help you maintain your equipment with TWAP TIRE AND WHEEL ANALYSIS

Let him study your loads, hauls, equipment, floors and hauling surfaces. Then he'll be able to recommend the correct type and size for your particular operation. He'll also give you expert advice on industrial tire care and maintenance. His advice is impartial and unbiased . . . for only B. F. Goodrich has a complete line of tires: a special type for every job (solids, semi-pneumatics and pneumatics), and a full range of sizes.

A similar program is available for manufacturers of industrial hauling equipment.

Use the coupon for full details at no obligation.

The B. F. Goodrich Co.
Department TW-99
Akron, Ohio
Please give me additional information on your new Tire and Wheel Analysis plan.
Name
Title
Company
City State

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

NEW LITERATURE—Continued

"Subjects match the product index"

PRESS TOOLS . . Standard round punches and dies; hole diameters and list prices for ⅛ to 1½-in. units, also taper-shank drill socket, taper pins. Booklet 533, 16 pages. Pratt & Whitney, 49 Charter Oak Blvd., W. Hartford 1, Conn. **IEN-0431**

PRINTING . . "Apeco" photocopy equipment for exposing, developing, drying prints; standard units, specifications, papers, chemicals. Catalog, 24 pages. American Photocopy Equipment Co., 2852 N. Clark St., Chicago 14, Ill. **IEN-0432**

PRINTING . . "BW Copyflex" machine to make contact prints of drawings or data by diazo process; operation steps, suggestions on use. Bulletin A-1078, 8 pages. Charles Bruning Co., 100 Reade St., First Floor, New York 13, N. Y. **IEN-0433**

PRINTING . . Model 60-G whiteprinting and developing machine; review of construction features, condensed specifications, operating steps. Folder 2536, 6 pages. C. F. Pease Co., 2631 W. Irving Park Road, Chicago 18, Ill. **IEN-0434**

PUMPS . . Small stainless-steel pump based on a reciprocating-bellows action; drawings, details. "Corson-Cerveny Micro-Bellows Pump," 12 pages. Research Appliance Co., Box 413-A, West View Road, Pittsburgh 9, Pa. **IEN-0435**

PUMPS . . Rotary design, 10 to 300 gpm., 100 and 200 lb.; models, specifications, table of recommended speeds and capacities for liquid handling. Bulletin 2501, 4 pages. Viking Pump Co., 49 Calvert St., Cedar Falls, Iowa **IEN-0436**

REFRIGERATING . . Equipment components including strainers, dehydrators, accumulators, special parts; descriptions, sizes, list prices. Bulletin 465, 6 pages. Refrigeration Research, 9905 E. Grand River, Brighton, Mich. **IEN-0437**

SCAFFOLDS . . "Trouble Saver" sectional tubular steel units; details on standard components, examples of assemblies made from them. Bulletin PSS-24, 12 pages. Patent Scaffolding Co., 38-23 12th St., Long Island City 1, N. Y. **IEN-0438**

SHEARING . . Machine for roll or sheet material such as light metal, foil, paper, fabrics, plastics to 50 in. wide; description, applications. "Jacques Power Shear," 4 pages. Hobbs Mfg. Co., 46 Salisbury St., Worcester 5, Mass. **IEN-0439**

SPRAYING . . Nozzles for water-recooling spray equipment; sizes, dimensions, performance curves, also spray ponds. Bulletin 6A-SP, 8 pages. Schutte & Koerting Co., Travler Ave. & State Rd., Cornwells Heights, Pa. **IEN-0440**

SPRINGS . . Compression, extension, flat, torque types; illustrated designs to show scope of company's facilities, equivalents. Pocket folder, 6 pages. Automatic Spring Coiling Co., 4046-50 W. Thorndale Ave., Chicago 30, Ill. **IEN-0441**

STAPLING . . Hand tools in paper-fastening, tack-driving, plier designs; illustrated models and specifications, staple sizes, application suggestions. Catalog 9, 6 pages. Arrow Fastener Co., 28-36 Maujer St., Brooklyn 6, N. Y. **IEN-0442**

STEELS . . Stock list, sizes and weights for steel shapes, bar, plate, sheet, strip, tube, also alloy and stainless. 1951 Catalog, letterhead request, 180 pages. David Smith Steel Co., 236-C 46th St., Brooklyn 20, N. Y. **IEN-0443**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4041 if you write the maker

A NEWS ADVERTISEMENT BY HONAN-CRANE CORP.

OIL DISPENSING . . "One-man" mobile unit for handling oils and coolants

Designated the Houdaille Oil Dispensing Unit, new vacuum-pressure assembly offers clean, simple method of transferring oil from drums to machine tool reservoirs or sumps; transferring oil between drums; removing oils or coolants from tanks for dispensing to machine tool sumps. Unit adaptable to many other liquid handling problems.

Fully enclosed vacuum pump and ⅓ hp. motor, mounted on strong steel wheels equipped with roller bearings, are operated by a single manual switch. Three-way valve permits quick change-over from vacuum to pressure side of pump as needed. No liquid or abrasives pass through pump to cause wear or stoppage. An airtight lid for open-top drums, equipped with Mercoid liquid level control, prevents overflow and spillage. Pivoted platform is designed for easy loading and unloading of standard 55 gallon oil drums.

One man can easily operate unit at considerable savings in time and labor. Ideal for use where many individual sumps require servicing.

HONAN-CRANE CORPORATION
subsidiary of HOUDAILLE-HERSHEY CORP.
802 Wabash Avenue, Lebanon, Indiana

BREVITY—Identify by IEN - 4042 if you write the maker

NEW— MODEL S 15 A TWIN TUBE POCKETSCOPE by WATERMAN

A portable twin tube oscilloscope with two independent vertical as well as horizontal channels, featuring high deflection sensitivity (10 mv/in.), linearized repetitive or triggered sweep (½ CPS. to 50KC), non-frequency discriminating attenuators and gain controls.

A new concept in multiple trace oscilloscopy made possible by the Waterman developed RAYONIC rectangular Cathode Ray tube, providing for the first time, optional screen characteristics in each channel (P1, P2, P7, P11), small size (12" x 6" x 7"), light weight (16¼ lbs.), low initial and replacement cost.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.

Waterman Products Include . . .

S-10-B	GENERAL	POCKETSCOPE	S-14-A	HIGH GAIN	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE	S-14-B	WIDE BAND	POCKETSCOPE

Also, RAKSCOPES, Linear Amplifiers, RAYONIC tubes and other equipment.

BREVITY—Identify by IEN - 4043 if you write the maker

PRE-MEASURED? CARTONIZED?

of course—it's NEW BEDFORD ROPE

NEW BEDFORD

PRE-MEASURED . . . factory marked in red at ten-foot intervals enables stockman to give out the exact length, keep accurate record with no fumbling—no delaying. Convenient—economical—sure—it's a feature that can't be beat.

CARTONIZED . . . Easy to handle, no bands to cut, no covers to remove. Just open, pull out the rope and cut. Coils stay clean, don't collapse . . . cartons can be stacked ceiling high. Just another feature your stockman will like . . . another feature that means *real* economy.

NEW BEDFORD ROPE . . . tops in quality, available at **no extra cost** in pre-measured Manila or Sisal. Packed in easy-to-dispense cartons . . . half or full coils.

Send for FREE reference chart on specifications for New Bedford Manila, Sisal and Nylon Rope.

NEW BEDFORD CORDAGE CO.
New Bedford, Mass.

BREVITY—Identify by IEN - 4044 if you write the maker

Where "SMALL WORK" GRINDING JOBS are concerned— DEPEND ON Foredom FLEXIBLE SHAFT MACHINES for TOP PERFORMANCE VERSATILITY and SPEED!

Quality Tested Since 1922

Model 9050 ONLY $29.60 COMPLETE with 6-STEP FOOT RHEOSTAT and PENCIL-SIZE HANDPIECE

Bench and Hang-Up Models, also models like Model 9050 (*illustrated*) which can be hung up, set on bench or mounted under bench. 5 Handpiece types, pencil-size or larger, all with quick-detachable feature. Extra good flexing qualities provide utmost freedom of movement in handpiece.

Foredoms are profitable additions to all three departments — PRODUCTION, TOOLING AND MAINTENANCE.

SEE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR. IF HE CANNOT SUPPLY YOU WRITE TO US. MAIL COUPON FOR CATALOG.

FOREDOM ELECTRIC CO., Dept. N-4141
27 Park Place, New York 7, N. Y.
Send your catalog No. N-4141, showing different uses of Foredom Flexible Shaft Machines.
Name
Address
City & Zone State

BREVITY—Identify by IEN - 4045 If you write the maker

★WARNING!

FEDERAL TYPE "A" SIREN

Skilled workmen and vital machinery are irreplaceable! Air raid, sabotage or fire can take a heavy toll unless distinctive, dependable signals respond instantly and unfailingly.

The Federal line of sirens are heavy-duty, precision-built signals that will give the alert in loud, distinctive tones.

One siren, no matter how large or how centrally located, can't blanket an area as well as a series of smaller sirens strategically located. Don't risk lives and equipment with inadequate alarms and too few units. Federal can supply all your needs.

Place your orders **NOW!**

FEDERAL ENTERPRISES, Inc.

Formerly: Federal Electric Company, Inc.

8745 SOUTH STATE STREET • CHICAGO 19, ILLINOIS

BREVITY—Identify by IEN - 4046 If you write the maker

FRESH AIR

freshens production, too

Remove fumes, heat, dust with ILG units

Employees are more comfortable and more efficient when there is proper and adequate ventilation. ILG blowers and fans — distributed by Graybar — are the most efficient, best-built units you can buy. All ILG equipment is built on the "exhaust" principle and designed to provide complete and frequent air change. For each of your ventilating needs, there's a standard unit that's "made for the job."

Product ventilation; heating, drying units

Graybar distributes the proper equipment not only for ventilating any room—or your entire plant—but also for built-in ventilation of products. In addition, Graybar has unit heaters for space heating or drying . . . plus all the accessories you need, including controls and wiring supplies. If you or your electrical contractor would like help in determining the best ventilating system for your conditions, call our nearest office and ask for a free survey of your plant.

Convenient source for everything electrical

Graybar distributes more than 100,000 electrical items for wiring, lighting, communication, power, and all your other electrical needs. Graybar Specialists are on call to help solve difficult problems.

Avoid delays — plan ahead with Graybar

Job delays due to unexpected shortages of electrical supplies are both annoying and costly. That's why you'll find it profitable to plan ahead with the assistance of your local Graybar Representative. He not only can furnish accurate catalog information and quotations on any electrical items—you can rely on him also to work out and *stick to* practical delivery schedules, subject to defense priorities and regulations. *Graybar Electric Company, Inc. Executive offices: Graybar Building, New York 17, N. Y.*

145-124

You get the best of everything electrical Via GraybaR

IN OVER 100 PRINCIPAL CITIES

IN OVER 100 PRINCIPAL CITIES

BREVITY—Identify by IEN - 4048 If you write the maker

GAGE . . Electronic instrument reads vacuum in microns of mercury

Source: HASTINGS INSTRUMENT CO.
Pine Ave. at Super Highway, Hampton 10, Va.

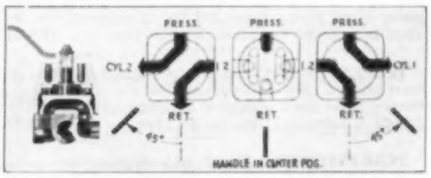
New selector unit has been added as a base element for the company's electronic vacuum gage previously described IEN-3683-50. It permits selection of one after another of five stations for vacuum measurement with the single instrument. Matched nickel-plated pickup tubes eliminate need for adjustment after switching from one to another. Calibration is not affected by exposure to atmospheric pressure or changes in ambient temperature. Each tube connects to the vacuum system by a standard ⅛-in. male pipe thread. Extensions for remote indication can be added as required since the length of electric cable from the instrument to each pickup tube does not affect calibration.

Operation is based on the noble-metal thermopile principle, as in the previous design, and a bridge circuit for operation on 110-volt ac. Decreasing pressure results in lowering the thermal conductivity of the gas surrounding the junction. This results in increase in temperature of the hot junction and corresponding output increase from the thermopile. The voltage difference so generated is the measure of the gas pressure surrounding the thermopile.

BREVITY—Identify by IEN - 4049 If you write the maker

VALVES . . Rotary hydraulic design, 2, 3, 4-way, pressure to 6,000 pounds

Source: BARKSDALE VALVES
1564 E. Slauson Ave., Los Angeles 11, Calif.



Cast steel disc containing suitable flow passages is the rotating member in this new Shear-Seal hydraulic operating valve. It is enclosed in a bronze body and is backed up by bearing balls so its lapped sealing face rides in contact with the body ports. These ports are fitted with spring-backed rings carrying O-ring packings. Combined action of the backing spring and the hydraulic pressure holds the rings in contact with the disc in leakproof assembly.

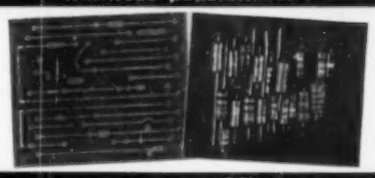
The valve is available in sizes from ¼ to 1½ in. in two, three and four-way arrangement for pressure to 6,000 pounds. It is made in a dual-pressure assembly in four-way design for pressure to 3,000 and to 6,000 pounds. It is made also in sizes from ⅜ to 1 in. in a two-way manipulator design for pressure to 1,500 pounds. It will handle air, water, gas, fuel oil as well as hydraulic oil. A characteristic of the design is the wiping action between the seat rings and the disc to prevent foreign matter from getting between the contact surfaces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4050 If you write the maker

PRINTED CIRCUITS

limitless possibilities!



economy! efficiency!

Emeloid "AUTOMATIC CIRCUIT FABRICATION" is the reproduction of an electrical circuit on an insulating surface of either thermosetting or thermoplastic material. This reproduced circuit is made of a conductive material such as copper so that it replaces conventional wiring.

It may also be used as commutator rings, switching mechanisms, etc. Some advantages of Emeloid's process compared to conventional wiring are as follows:

1. FREEDOM FROM WIRING ERRORS
2. CIRCUIT CHANGES EASILY MADE
3. REDUCTION IN COST
4. MORE PRODUCTION PER UNIT TIME
5. UNIFORM GEOMETRIC POSITIONING
6. INDEPENDENCE FROM LABOR SKILLS
7. ELIMINATION OF ENGRAVING OR STAMPING
8. MINIATURIZATION

INQUIRE
DEPT. P. C. No. 1

The EMELOID CO. PLASTICS PRODUCTS
HILLSIDE, N. J.

BREVITY—Identify by IEN - 4051 If you write the maker

THAT'S WHY YOU SEE SO MANY MOTORS WITH KLIXON PROTECTORS

The experience of countless users of motors proves conclusively that Klixon Protectors extend the operating life of motors by preventing motor burnouts. Built-in by the motor manufacturer, these foolproof protectors safeguard motors from overheating due to shorts or overloads.

Here's how a Klixon Protector operates — should the motor become dangerously overheated, the Klixon Protector snaps the power "off". When it cools sufficiently, the Protector snaps the power "on" again automatically if the "automatic reset" type is used . . . or by pushing the red button when the "manual reset" type is used.

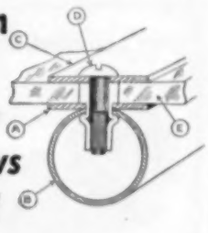
Remember, you too, can keep equipment operating, cut maintenance costs by using motors with Klixon Protectors.

SPENCER THERMOSTAT
Division of Metals and Controls Corp.
204 Forest Street, Attleboro, Mass.

KLIXON

BREVITY—Identify by IEN - 4052 If you write the maker

RIVNUTS fasten plastic sheets to tubular post ...make windows weather-tight!



To provide a neat, tight seal for airplane windows, designers needed a simple, one-piece fastener — a blind rivet and nut plate combined. They found an ideal, time-saving answer in a spacer-head B. F. Goodrich Rivnut.

The Rivnut is upset, riveting plate "A" to tubular center post "B". The Rivnut head serves as a spacer for transparent plastic sheets "E". Screw "D" is then threaded into the still-intact Rivnut threads to hold clamp strip "C" and plastic sheets in place.

If *you* need a fastener to improve your product and cut production time, call in a Rivnut engineer.

NOW! FREE DEMONSTRATOR!

Shows with motion how Rivnuts work. Explains construction, gives applications. Write to

B.F.Goodrich DEPT .IE-41, AKRON, OHIO

BREVITY—Identify by IEN - 4053 If you write the maker

NEW

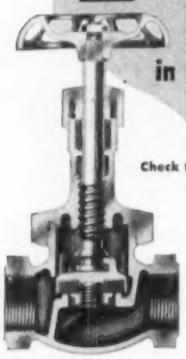
OSTER THREADING MACHINES

Cutting-off speed is approximately three times the threading speed of the new Oster "WILCO" pipe and bolt threading machines. The correct speeds for threading and cutting-off are obtained through the transmission and TWO SPEED motor. A single die-head covers the entire range of each machine. One set of holders and dies threads all sizes, right hand American National Standard of the same pitch without change. Other developments make the new Oster "WILCO" machines highly efficient for maintenance and production threading. Standard range of No. 714 "WILCO": 1" to 4" pipe; extra range ½" and ¾" pipe; bolt range ¾" to 3". Standard range of No. 716 "WILCO": 1" to 6" pipe; bolt range 1" to 4".

THE OSTER MANUFACTURING COMPANY
2053 East 61st Street • Cleveland 3, Ohio, U. S. A.

BREVITY—Identify by IEN - 4054 if you write the maker

New JENKINS VALVES for Safety and Economy in L.P.G. SERVICES



Check these special design features

- Extra heavy, reinforced body — takes all ordinary pipe strains; provides a safety factor far above any L.P.G. service needs.
- Crowned seat — insures positive tightness, meets N.B.F.U. test of 500 p.s.i. under seat when valve is closed.
- Improved composition disc — meets every test of L.P.G. service.
- Deeper packing box — and spiral, lubricated packing material permit spindle to turn with minimum friction.
- All other parts specifically designed and proportioned to meet rigorous requirements of critical L.P.G. service.

Fig. 506 BRONZE GLOBE for L.P.G. SERVICE 400 lbs. O.W.G.

Construction features of Jenkins Fig. 507 Check and Fig. 508 Angle L.P.G. Valves same as for above.

Ask your Jenkins Distributor for the new Jenkins L.P.G. Valve folder, or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES SINCE 1864

BREVITY—Identify by IEN - 4055 if you write the maker

Here's Efficient, Dependable Air Supply

JOY WL-80 "UNITAIR" COMPRESSOR

★ 81 to 640 CFM
★ Two Stage ... Air cooled
★ A size for *every* standard motor rating
★ Force-feed lubrication
★ Small floor-space requirements

And here's FREE HELP!

Bulletin A-56 . . . new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

Consult a Joy Engineer

W&D 13086

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

BREVITY—Identify by IEN - 4056 if you write the maker

Gives ONE MAN the strength of FIVE!

GO-GETTER Pallet Type POWER LIFTRUCK

This walk-along electric truck is compact, powerful . . . gives one man the strength of five. Go-Getter lifts full four inches in only four seconds, drops loads gently and quietly. It rides smoothly on uneven surfaces. Braking is safe and easy. This power-operated liftruck is strong, maneuverable, stable . . . has 200° turning arc and low center of gravity. Comes in 2-ton and 3-ton models. Send coupon today for Bulletin.

BULLETIN

REVOLVATOR CO.
DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT
8759 TONNELE AVE., NORTH BERGEN, N. J. • SINCE 1904

Without obligation, please send bulletin on Go-Getter Pallet Type Power Liftrucks.

Name .....
Position .....
Company .....
Address .....
RE-TOTA

NEW LITERATURE—Continued

"Note the special 'O' numbers"

STORING . . Transparent-plastic shop envelopes and holders, presentation books, other plastic-and-leatherette assemblies to cover work records. Catalog 51, 28 pages. Joshua Meier Co., 153 W. 23rd St., New York 11, N. Y. **IEN-0444**

STORING . . "Planmaster" sectional steel file cabinets for drawings and prints to 50 by 38 in.; models, dimensions, construction points. Bulletin 203, 2 pages. Stacor Equipment Corp., 1889-93 Atlantic Ave., Brooklyn 33, N. Y. **IEN-0445**

STUD DRIVING . . Tool to drive or extract studs, particularly in aircraft; operating description, sectional view, hand and power models. Bulletin 236-R, 4 pages. Heli-Coil Corp., 47-150 35th St., Long Island City 1, N. Y. **IEN-0446**

TESTING . . Ground resistance testers for electrical equipment; operating description, schematic drawings, available models and ranges. Bulletin 25-19, 20 pages. James G. Biddle Co., 1314-18 Arch St., Philadelphia 7, Pa. **IEN-0447**

TESTING . . Instruments for paint and other laboratory use; details on 75 items for testing viscosity, film thickness, hardness, color, wear. Catalog, 32 pages. Henry A. Gardner Laboratory Inc., 4725 Elm St., Bethesda 14, Md. **IEN-0448**

TESTING . . Equipment for radioactive work; data summaries and list prices on scalers, sample holders, survey meters, GM tubes, radiochemicals. 1951 Price List, 8 pages. Tracerlab Inc., 128-32 High St., Boston 10, Mass. **IEN-0449**

THERMOMETERS . . Dial-type instruments, mercury and gas-actuated, minus 40 to plus 1,000 deg. F.; models, construction, scales. Catalog 200, 16 pages. Gotham Instrument Div., 149 Wooster St., 4th Fl., New York 12, N. Y. **IEN-0450**

THREADING . . Power machines to cut threads in ⅛ to 2-in. pipe and bolts; specifications on three models, also on a power drive. Pocket folder PM-150, 12 pages. Beaver Pipe Tools Inc., 200-300 Dana Ave., Warren, Ohio **IEN-0451**

TRUCKS . . Fork lift trucks with engine drive; data summary table on 1,500 to 15,000-lb. models, also a tractor and an electric pallet truck. Folder F-2, 4 pages. Towmotor Corp., 1224-28 E. 152nd St., Cleveland 10, Ohio **IEN-0452**

TUBE FITTINGS . . Flared, compression, solder-type tube fittings, also hose fittings, pipe fittings, valves, cocks, flaring tools, specials; data summaries. Catalog SB, 24 pages. Span Brass Mfg. Co., 51 Industrial Ave., Otsego, Mich. **IEN-0453**

TUBES . . Small tubes, .010 to ⅝ in. od., in steel, stainless, nickel alloys, other metals; wall thickness table, data on seamless and welded tube. Bulletin 32, 4 pages. Superior Tube Co., 2114 Germantown Ave., Norristown, Pa. **IEN-0454**

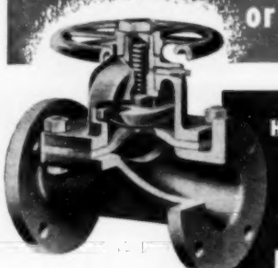
TUMBLING . . Type-LS tumbling barrels for metal or plastic parts; general description, dimensions on four models, compounds. Bulletin LS-50, 2 pages. Tumb-L-Matic Inc., 4508-12 Bullard Ave., New York 70, N. Y. **IEN-0455**

VALVES . . Bronze gate valves, ⅛ to 12 in.; description by construction and connection type, specification table on 125 to 300-lb. units for steam. Bulletin V-260, 4 pages. Fairbanks Co., 395 Lafayette St., New York 3, N. Y. **IEN-0456**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4057 if you write the maker

Now you can valve 66° Be Sulphuric Acid without leakage, dripping or sticking



HILLS-McCANNA *Diaphragm Valves* with L-1 PLASTIC DIAPHRAGMS

For temperatures to 125° F., pressures to 100 psi. Sizes ½" through 4". Write for complete details.

HILLS-McCANNA
diaphragm valves
saunders patent
Proportioning Pumps
Force-Feed Lubricators · Magnesium Alloy Castings
HILLS-McCANNA CO., 2347 W. Nelson St., Chicago 18, Ill.

BREVITY—Identify by IEN - 4058 if you write the maker

PORTELVATOR® "S"
for extra low pick-ups and extra high lifts.

Safety of Operation

is inherent in the mechanical lift principle of this brawny tool, which transmits power through worm, worm gear, and screw.

Eliminates "ganging-up" on heavy lifts. Reduces occurrence of industrial accidents. Saves valuable production time.

Get complete information now and be ready for the challenge ahead. Write for Bulletin P-506-S.

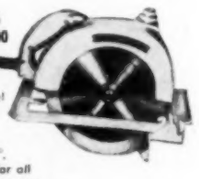
CAPACITY . . . . . 1000 POUNDS
MAXIMUM PLATFORM HEIGHT . . 58"
MINIMUM PLATFORM HEIGHT . . 6"

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

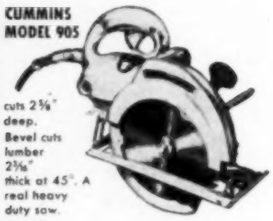
BREVITY—Identify by IEN - 4059 if you write the maker

Power Saws
CUT MAINTENANCE COSTS BY CUTTING 10 TIMES FASTER
... 100 times easier!

CUMMINS MODEL 700
cuts 2⅛" deep. Bevel cuts 2" dressed lumber at 45°. Compact, light in weight. Low priced.



CUMMINS MODEL 800
cuts 2⅝" deep. Bevel cuts lumber 2⅝" thick at 45°. Preferred for all plant maintenance.



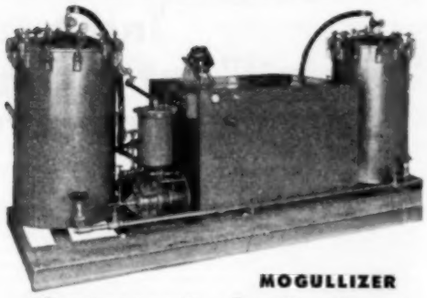
CUMMINS MODEL 905
cuts 2⅝" deep. Bevel cuts lumber 2⅝" thick at 45°. A real heavy duty saw.

CUMMINS MODEL 1000
cuts 3⅞" deep. Bevel cuts lumber 2⅝" thick at 45°. The "All-Purpose" Plant saw.

Cummins PORTABLE TOOLS
DIVISION OF CUMMINS-CHICAGO CORPORATION
4740 NORTH RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS
IN CANADA: CUMMINS PORTABLE TOOLS 37 Church Street, Toronto, Ontario

ASK YOUR JOBBER . . . ASK YOUR JOBBER . . . ASK YOUR JOBBER . . .

BREVITY—Identify by IEN - 4061 If you write the maker



MOGULLIZER

Eliminates Leaky Castings

If your contract calls for impregnation, or if your production castings leak or weep and will not hold pressure, investigate our Mogullizing system—a high vacuum and pressure method of sealing castings. Models to meet your requirements.

Any standard impregnating material can be used but for top efficiency we recommend our Mogul Cast Seal.

Prompt deliveries.

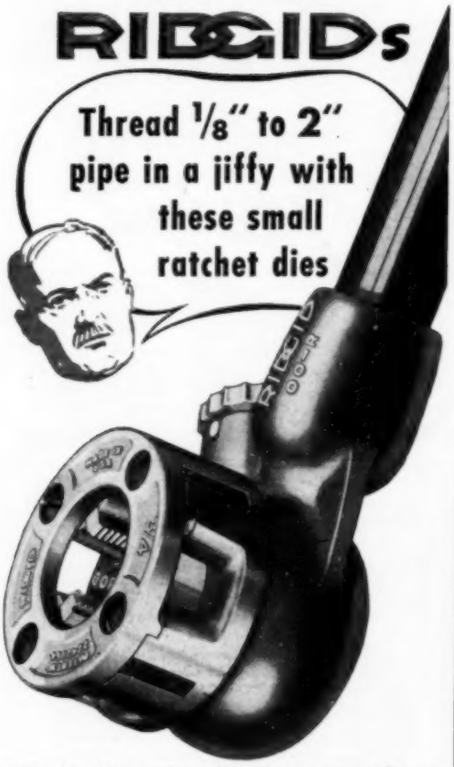
Write today for full details on the Mogullizing system.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 4062 If you write the maker

Easy to Cut Perfect Threads with these RIDGIDs

Thread 1/8" to 2" pipe in a jiffy with these small ratchet dies



• The handy threaders that give you smooth perfect threads—extra fast and easy! Quick get-ready—just snap in the size die head you want and start threading. Die heads snap in from either side—can't fall out. Dies are precision-cut of fine tool steel. No special dies needed for close-to-wall work. Ask your supply house for work-saver RIDGID No. OOR, 1/8" to 1"; No. 111R, 1/8" to 1 1/4"; No. 12R, 1/8" to 2"—free carriers with sets.

RIDGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

BREVITY—Identify by IEN - 4064 If you write the maker

TESTING . . Circuit indicator, range is 110 to 600 volts, ac. or dc.

Source: SITTLER CORP.
20 No. Ada St., Chicago 7, Ill.

Neon lamp in the company's new GAS-100 circuit or voltage indicator replaces a miniature incandescent lamp in the unit previously described IEN-916-41. A 5,000-ohm resistor is tapped at 3,000 ohms and shunted across the lamp, leaving 2,000 ohms isolated to prevent short circuit in case of failure of the insulation between the other parts of the unit. A 100,000-ohm resistor also is in series with the lamp. The circuit starts at one prod in the main housing and extends through the lamp, an extension cord and a second prod. Action of the neon lamp in the circuit permits the operator to distinguish between ac. and dc., to identify 25 and 60-cycle ac. and to judge voltage between 110 and 600 volts ac. or dc. List price is $5.00.

BREVITY—Identify by IEN - 4065 If you write the maker

ISOLATING . . Vibration insulator for airborne electronic equipment

Source: LORD MFG. CO.
1637-41 W. 12th St., Erie, Pa.

Temproof trade names new vibration insulator that has been designed for operation in a temperature range between minus 80 and plus 250 deg. F. to meet government specifications JAN-C-172A. The assembly includes a friction damper to prevent excessive motion at resonant frequencies.

BREVITY—Identify by IEN - 4066 If you write the maker

ROCK DRILLING . . Carbide drill for portable tool rotation in masonry

Source: CONCRETE TERMITE DRILL CO.
2078-82 Foothill Blvd., Pasadena 8, Calif.

Spiral body of this new drill assists in removal of pulverized material cut from the face of a hole in masonry by the carbide tip at the outer end. The drill is available in lengths starting at 4 in. and maximum at 36 in. with diameters from 1/4 to 7/8-in. in solid construction. Larger diameters in a core section range from 7/8 to 5 inches. Body length is standardized in the various overall drill lengths, an extra-long shank being used in the longer ones. The shank screws into the body for application, removal and interchange.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 4067 If you write the maker

The fact that all the horsepower goes through the coupling emphasizes the importance of protecting direct-connected machines against misalignment.

AJAX FLEXIBLE COUPLING CO. INC., WESTFIELD, N. Y.

BREVITY—Identify by IEN - 4068 If you write the maker

2 signposts FOR IMPROVED LIGHTING

1. Look for fixtures equipped with famous G-E Watch Dog* starters. You'll recognize them by the red reset button that means steady lighting.

Watch Dogs eliminate the annoying flicker of aging lamps. At the first sign of blink, out pops the red reset button, cutting the lamp out of the circuit. When the maintenance man replaces the lamp, he merely pushes the button to restore lamp service.

Because they don't try to start worn-out lamps, Watch Dogs outlast ordinary starters as much as five to one.

2. Look for the Watch Dog tag or sticker on the fixtures you buy. It's a sign that the manufacturer has improved fluorescent lighting in mind for you. Section Q63-442, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

*Registered Trade Mark of General Electric Company

GENERAL ELECTRIC

BREVITY—Identify by IEN - 4069 If you write the maker

SAVE TIME WITH ELECTRONIC AMPLICALL
THE BETTER BUSINESS INTERCOM SYSTEM

SEE YOUR CLASSIFIED PHONE BOOK under "Intercommunication" for your local AMPLICALL specialist, or write us direct

Here's the way to gear up for increased output! AMPLICALL 2-second speech contact between all departments saves time—cuts costs—measurably increases plant and office efficiency. AMPLICALL keeps personnel on the job every working minute—*gets more work done for every operations dollar spent*—pays for itself quickly! Get the full details on fast-action AMPLICALL *today*.

Electronics is our business
SOUND EQUIPMENT — **Rauland** — INTER-COMMUNICATION
RAULAND-BORG CORPORATION • 3523-R ADDISON ST., CHICAGO 18, ILL.

BREVITY—Identify by IEN - 4070 If you write the maker

POWER EFFICIENCY! Baker-built motors for travel, hoist and tilt develop the highest horsepower for any motors of their size and weight.

LOWER MAINTENANCE, GREATER SAFETY! Dynamic-braking, NoPlug Controller, operated by accelerator pedal, saves wear and tear on motor, drive axle, service brake and tires.

TROUBLE-FREE TRANSMISSION! Efficient worm-drive power axle minimizes gear losses and reduces maintenance.

MAXIMUM MANEUVERABILITY, SMOOTHER RIDING! Baker patented wide-angle steering axle is mounted longitudinally in jumbo-size rubber blocks accommodating it to uneven roadways, and absorbing shock from rough floors.

SAFE, TIRELESS OPERATION! Automotive-type steer, soft-touch brake, cushion tires, greater visibility for operator.

HYDRAULIC LIFT AND TILT! Low-pressure hydraulic system for lift and tilt motions, increases safety and minimizes seepage.

RUGGEDNESS AND STAMINA! All-welded steel truck frame with integral bumper counterweight. Most efficient structural design for strength and utilization of space.

Write for Bulletin 1327

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*
1226 WEST 80th STREET • CLEVELAND 2, OHIO

Baker INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 4071 if you write the maker

Let this all-purpose

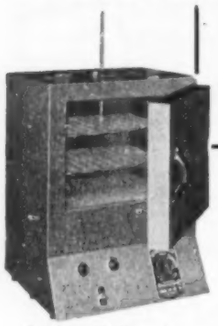
DEWALT

save money in *Your* plant

Here is the ideal, all-purpose machine you need to cut costs and step up production in your plant. DeWalt is *many* machines in one! It dadoes, routs, shapes, tenons, grinds, sands, etc.! It's fast, accurate, safe, dependable. It takes up little floor space—and streamlines all your cutting operations. Write for catalog. DeWalt, Inc., Dept. 1E-4, Fountain Ave., Lancaster, Penna.

DEWALT INC.
A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 4072 if you write the maker



HUPPERT KH 1200 LABORATORY OVEN

—Equalized oven heat at all times

Test results from Huppert KH 1200 Ovens are always accurate. There is no variance in temperatures. You are assured a ±1° C. accuracy at any setting up to 425° F. /220° C. This is achieved by a double venting system for constant dispersion of fumes and other exhaust air, permitting cleaner operation and better distribution of heat. Work chamber is stainless steel—12" x 10" x 10".

Complete with Thermostatic Control
$80.00
With Thermometer
$85.00
All Stainless Steel
$105.00
(Thermometer $6.00 extra)

ALSO HUPPERT 5700 SERIES OVEN

MODEL	I. D.	WATTAGE	TEMP. RANGE	PRICE
5700LT	20" x 15" x 19"	1400	80° F. to 350° F.	$160.00
5700MT	20" x 15" x 19"	1800	80° F. to 400° F.	$160.00
5700HT	20" x 15" x 19"	2400	80° F. to 500° F.	$160.00

(Centigrade scale optional)
1 hour timer—$10.00 additional
Write for literature

K. H. HUPPERT CO.
6856 Cottage Grove Avenue Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

BREVITY—Identify by IEN - 4073 if you write the maker

4 things to look for when you need a new black-and-white print machine

FUMES? Bruning BW machines use no vapors, emit no fumes, need no exhaust vents or plumbing connections.

MAINTENANCE? Patented Bruning mechanical transmission runs for years without attention. All essential bearings lubricated for life.

FLEXIBILITY? There's a BW machine for every copying job, with speeds up to 105 sq. ft. per minute.

PLUS . . . an unrivalled variety of sensitized materials — freshly coated in each section of the U. S.

Write today for booklet A-1053A describing the Model 93.

BRUNING
CHARLES BRUNING COMPANY, INC.
Dept. H-41, 100 Reade Street
New York 13, N. Y.

NEW LITERATURE—Concluded

"Send us your own new literature for review"

VALVES . . Non-return valve for boilers; cut-away views and operating sequence description, dimensions on 2½ to 14-in. sizes. Bulletin S-2, 6 pages. Golden-Anderson Valve Specialty Co., 2079 Keenan Bldg., Pittsburgh 22, Pa. **IEN-0457**

VALVES . . Temperature and pressure-regulating units, float and relief valves, traps, water gages, thermometers; drawings, data, list prices. Catalog 51, 56 pages. O. C. Keckley Co., 402 W. Madison St., Chicago 6, Ill. **IEN-0458**

VALVES . . No. 11 self-operating regulating valve for air or liquid temperature; operation, body types, selection table, application drawings. Bulletin 329, 8 pages. Powers Regulator Co., 2737-A Greenview Ave., Chicago 14, Ill. **IEN-0459**

VALVES . . Steam equipment for power plants including traps, water columns, feed-water regulators, pump and check valves; condensed data. Bulletin WG-125, 8 pages. Williams Gage Co., 1618-26 Penna. Ave., Pittsburgh 12, Pa. **IEN-0460**

VENTILATING . . Electric fans in bench, ceiling, floor, wall-mounting models; sizes, specifications, air-delivery ratings. Catalog X-6849, 32 pages. Emerson Electric Mfg. Co., 8102 Florissant Ave., St. Louis 21, Mo. **IEN-0461**

WATER TREATING . . Colloidal material to minimize scale, corrosion, algae in cooling water for air conditioning; properties, use. "Cooling Water Conditioner," 4 pages. Agava Products, 32-36 Exchange Pl., Jersey City 2, N. J. **IEN-0462**

WATER TREATING . . No. 100 organic-amine corrosion inhibitor for steam and condensate lines; notes on its action and application. Data Sheet 25-X-7582, 2 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-0463**

WELDING . . Jigs and fixtures for inert-gas arc welding; picture examples and work methods in reprint of an article from the literature. Form ADR-67, 12 pages. Air Reduction Sales Co., 1656 Lincoln Bldg., New York 17, N. Y. **IEN-0464**

WELDING . . Spatterproofing material to wipe off after a welding operation ready for paint, also a corrosion proofing to use prior to welding; properties. Bulletin 50, 4 pages. G. W. Smith & Sons Inc., 5410 Kemp Road, Dayton 3, Ohio. **IEN-0465**

WEIGHING . . Crane scale, ¼ to 50 ton in 34 models; sectional drawing and description of its hydraulic operation, uses, dimensions. "Hydroscale," 6 pages. Hydroway Scales Inc., 20622-26 W. 8-Mile Road, Detroit 19, Mich. **IEN-0466**

WEIGHING . . Automatic weighing equipment for process materials; scale types classified by material from alfalfa meal to zinc oxide. Bulletin 0450, 6 pages. Richardson Scale Co., 666-700 Van Houten Ave., Clifton, N. J. **IEN-0467**

WOOD TREATING . . Pentachlorophenol to treat wood against decay and termites; properties of pressure-treated lumber, how to specify. "Pointers on Penta," 12 pages. Dow Chemical Co., 913-17 Jefferson, Midland, Mich. **IEN-0468**

WOOD WORKING . . Tools and attachments for company's radial-arm circular sawing machine; data on saw blades, cutters, abrasive wheels, bits, guards. Catalog, "Tools," 12 pages. DeWalt Inc., 63 Fountain Ave., Lancaster, Pa. **IEN-0469**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4074 if you write the maker

SLITTERS AND ROLLWINDERS

For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

CAMERON MACHINE CO.
61 POPLAR ST., B'KLYN 2, N.Y.

Camachine®
First in roll production equipment

BREVITY—Identify by IEN - 4075 if you write the maker

insist on "buried" integrity in your products

In the durable goods field most of the products are composed of many component parts. Acadia Synthetic Rubbers are contributing importantly to the superiority of thousands upon thousands of these products on land, sea, and in the air—from battleships to tiny instruments. For years manufacturers in hundreds of industries have found by experience that, with Acadia Synthetic Rubber parts in their products, they will never have trouble from that source. Acadia is a "buried" but vital component for products of highest integrity. Insist upon it!

for every synthetic rubber requirement

sheets • tubing • strips • channel • washers
seals • bellows • gaskets • rings
extrusions • cut parts

Resists oil, age, wear, heat, light

ACADIA *Synthetic* PRODUCTS
Processors of Synthetic Rubber and Plastics • Sheets • Extrusions • Molded Parts
DIVISION WESTERN FELT WORKS
4035-4117 Ogden Avenue, Chicago 23, Illinois

BREVITY—Identify by IEN - 4076 if you write the maker

slashed selling price—chopped assembly costs—saved floor space—by assembling with *Pliobond*

Home humidifier made by Carlisle Manufacturing Company, Division of Newark Fireproof Sash and Door Company. PLIOBOND joins corrugated section to flat portions to form leakproof, rustproof seam.

PRIOR to 1947, the maker of this household humidifier galvanized his product *after* assembly, thereby wasting needed space and entailing high material costs. Then, after trying numerous adhesives, he switched to PLIOBOND—Goodyear's easy-to-handle, rubber-like adhesive that "bonds anything to anything." This change enabled him to use pregalvanized sheets and to obtain durable high strength, watertight, rustproof seams at much lower labor and material costs.

You, too, can use PLIOBOND to form permanent, positive bonds quickly and easily between a wide range of materials. No primers, activators or cures required—just simple application to each of the surfaces to be bonded.

PLIOBOND may well be the answer to your own assembly problems. Ask for full details on this versatile quality adhesive that's available through convenient distributors—coast to coast. Write today to:

Goodyear, Chemical Division
Akron 16, Ohio

GOODYEAR

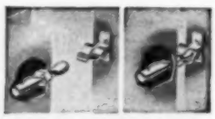
We think you'll like "THE GREATEST STORY EVER TOLD" Every Sunday—ABC Network

Pliobond—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

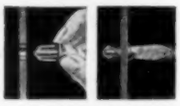
BREVITY—Identify by IEN - 4078 if you write the maker

Have you a similar use for this 1-piece fastener?

It's a Shelf Support...For ranges or refrigerators—in plastic and metal. Leading appliance makers have achieved substantial installation savings through it.



It's a Cabinet Door Strike...Simple to install; eliminates welding and cuts assembly cost. Any head can be designed without affecting fastening principle.



It's a Blind Rivet...Or a removable fastener. It locks and unlocks with a 90° clockwise rotation. No mating parts such as nuts or receptacles.

It's a Lifter Knob or Dashboard Plug...Plastic Spring-Lock heads are molded around steel inserts, giving strength at point of load or impact. Any shape head can be molded in any color.

What's Your Application?

...Tell us how you can use Spring-Lock Fasteners in your products. We'll be glad to work out the details with you.

Send for more data and *Free Samples* today.

Simmons Fasteners

QUICK-LOCK • SPRING-LOCK
ROTO-LOCK

SIMMONS FASTENER CORP., 1758 North Broadway, Albany 1, N. Y.

BREVITY—Identify by IEN - 4079 if you write the maker

BREVITY—Identify by IEN - 4080 if you write the maker

SEND FOR

Your Catalog FROM

INDUSTRY'S HEADQUARTERS FOR VALVES TO AUTOMATICALLY CONTROL THE FLOW OF LIQUIDS AND GASES

1. "on and off" valves
2. cycling valves
3. flow-directing valves

Forty years ago, we began to design and manufacture solenoid valves. So, we do have plenty of experience to guide us in our selection of valves for automatic control problems brought to our attention. And we have an exceptionally wide range and variety of solenoid valves from which to select, including many explosion-proof and Factory Mutual approved types.

We'll be glad to work with you on any automatic flow control problem you have. To get acquainted with our work, send for our Condensed Catalog 200-R.

When in need of Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Specialized Electromagnetic Controls, come to us.

Automatic Switch Co.
385 LAKESIDE AVE. • ORANGE, NEW JERSEY

BREVITY—Identify by IEN - 4081 if you write the maker

TESTING . . Accelerometer records on enclosed magnetic tape

Source: ENGINEERING RESEARCH ASSOCIATES INC.
1900 W. Minnehaha Ave., St. Paul W4, Minn.

The effects of shock loading, particularly in large structures, can be studied as a function of the partially-erased carrier current trace on a magnetic tape in this new Era self-recording instrument. It was initially developed for application in an underground explosion test program. It has been used in a rocket to make a record at the instant of contact. It is suited to check the ability of packages to resist shock loading, impact abuse and for operational tests on motor vehicles, trains, aircraft to determine "ride" characteristics.

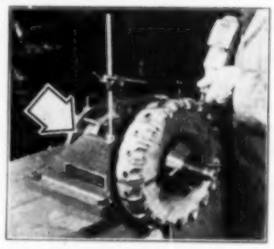
Maximum recording time is 7 seconds. Constant speed recording time is 4 seconds. Interchangeable actuating elements are available in five ranges of acceleration, maximum at 10 to 500G and in five ranges of frequency maximum at 230 to 1,600 cycles. Overall dimensions are 8 by 4 by 4 inches. Weight is 8 pounds. Complete equipment includes a recording and playback unit consisting of a motor-driven drum and oscilloscope and power supply for operation at 110-volt, 60-cycle ac.

The record is made on a magnetic tape driven at constant speed by a spring motor with a trigger control that permits starting at a desired instant under predetermined conditions. The tape is initially prepared by recording a high-frequency carrier magnetization upon it. During the recording interval the tape is driven past a tiny magnet secured on a small spring-mounted head or mass. Shock imposed on the instrument causes the magnet to move in relation to the tape and so erase more or less of the carrier magnetization. This disturbing of the carrier pattern is the measurement provided for study by the oscilloscope where the record produced before the transient is checked with that produced during the transient interval of shock loading.

BREVITY—Identify by IEN - 4082 if you write the maker

VISE . . Pneumatic design holds inserted blade milling cutter

Source: INGERSOLL MILLING MACHINE CO.
2405 Douglas St., Rockford, Ill.



New Cutter Vise bolts to a bench and takes interchangeable arbors for cutters with 1½ and 2½-in. bores, or other diameters to specification. The vise is air operated to open and close the jaws for release or anchoring of an inserted tooth cutter so it can be positioned and held while wedges are driven and screws are tightened in a blade set-up operation. A gage pointer is assembled on the vise housing to assist in setting blade height uniformly around the circumference.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 4083 if you write the maker

how to trap amperes and save circuits....

Amp-trap

AMAZING NEW CURRENT LIMITER
100,000 rms AMPERES INTERRUPTING CAPACITY

TWO-WAY PROTECTION
Protects against *both* overloads and shorts on circuits up to 600 Volts AC or DC. Supplied in all standard ratings from 1 to 4,000 amps. Limits short circuit currents on circuits where available short circuit current may be as high as 200,000 amps.

STOPS SHORT CIRCUITS SHORT
Lightning fast Amp-trap is directly responsive to the *rate of short circuit current rise*. It is *as fast as the circuit is fast*. Provides positive overload and short circuit protection for switchgear, bus-ducts, motor starters, circuit breakers, current transformers. With Amp-trap you can now have low-cost protection for every service entrance on a network system.

APPROVALS
Listed by Underwriters Labs. Interrupting tests up to 202,000 amps @ 500V 60 Cycles witnessed and certified by Electrical Testing Laboratories, Inc.

FOR OLD OR NEW SYSTEMS
There is an Amp-trap for every application. They are easily installed and quickly adapted to new or old equipment. Cost is relatively low.

WRITE TODAY. SEND FOR FREE BOOKLET ON AMP-TRAP.

*Trade Mark Registered.

(You can get Amp-trap)

THE CHASE-SHAWMUT CO.
500 MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS

BREVITY—Identify by IEN - 4084 if you write the maker

NEW simple accurate versatile Odee-HONE

For honing all types of External Cylindrical Surfaces. A single tool for all parts from ½" to 2½" in diameter.

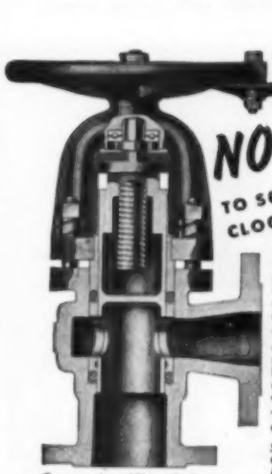
GENERATES ACCURATE SIZE, ROUNDNESS, STRAIGHTNESS, AND FINISH ON

Spindles	Pistons and	Test bars
Shafts	piston rods	Die pins
Guide pins	Rollers	and
and bars	Plungers	similar parts

For complete information write or call—

MICROMATIC HONE CORPORATION
8100 Schoolcraft Avenue • Detroit 4, Michigan

BREVITY—Identify by IEN - 4085 if you write the maker



NO SEAT!

TO SCORE...WEAR... CLOG...AND LEAK

The Yarway Seatless Blow-Off Valves eliminate the commonest source of trouble and expense with ordinary blow-off valve operations.

The famous seatless principle first introduced nearly 40 years ago, has been constantly improved and adapted to meet modern service requirements.

There is a Yarway Blow-Off Valve for every pressure.

SEND FOR FREE BLOW-OFF VALVE BOOKLET. PLEASE STATE YOUR BOILER PRESSURES.

Cross section of Type "B" Seat-Jess Angle Valve, Flanged.

YARNALL-WARING COMPANY
122 Mermaid Ave., Phila.18, Pa.

YARWAY BLOW-OFF VALVES

BREVITY—Identify by IEN - 4086 if you write the maker

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE® ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
173 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 4087 If you write the maker

MECHANIZE YOUR FINISHING for less than 5¢ per hour*

With labor costs at an all-time high, it's just good business sense to mechanize hand work wherever possible. That's why cost-minded firms like Modern Tool & Die — Raush Nut & Mfg. Co. of Cleveland, Ohio, and others, use Dumore hand-grinders and flexible-shaft tools to step up their bench and tool room finishing production.

DH-4A

Write for free catalog and the Dumore cost story.

*Based on user cost records. Includes tool cost, interest, depreciation, current and maintenance allowance. Based on 200-hour shift year.

The DUMORE Company
Dept. D-47, RACINE, WISCONSIN
Export address: 13 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 4088 If you write the maker

Here's BIG NEWS on Blast Cleaning Dust Control Precision Finishing

Blast Cleaning Unit is PORTABLE!

Ideal for maintenance and many other jobs, including removal of rust, dirt, scale, etc. Economically cleans large objects like tanks, bridges, structural work before painting. Six sizes, stationary or portable, from $170.00 and up.

Hydro-Finish SPEEDS POLISHING!

Removes scale and directional grinding lines . . . prepares surfaces for plating and holds tolerances to .0001"! Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from $1295.00 and up.

STOP DUST at the SOURCE!

Pangborn industrial type Unit Dust Collectors trap dust at source. Machine wear is minimized, housekeeping and maintenance costs reduced. Solves many grinding and polishing nuisances and material losses. Models from $286.00 up.

COMPACT Blast Cabinet for SMALL WORK!

Ideal for producing clean, smooth surfaces on pieces up to 60" x 36" in size. Cleans metal parts, removes rust, scale, grime, dirt, paint, etc., in a few seconds. Saves money all year 'round. Models from $315.00 and up.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control Equipment

Pangborn MAIL COUPON FOR DETAILS

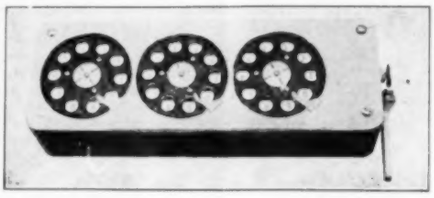
Check for more information
- Blast Cleaning Cabinets
- Blast Cleaning Machines
- Unit Dust Collectors
- Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked at the left.
Name.....
Company.....
Address.....
City.....Zone.....State.....

BREVITY—Identify by IEN - 4090 If you write the maker

COUNTING . . Predetermining unit mounts 3 or 4 telephone type dials

Source: MARKEM MACHINE CO.
148-52 Congress St., Dept. C, Keene, N. H.



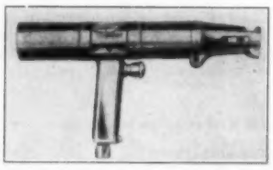
A required total, to limit a given operation, is set up on this new Dial-O-Matic counter by dialing each of the digits in the total to a maximum of 999 in the three-dial assembly illustrated, or to 9,999 in a four-dial unit which also is available. The counter connects by means of a lever-type finger to a machine. It operates the dial in reverse to bring the count back toward zero as an operation progresses.

Each dial represents the total remaining in its digit position until zero setting is reached. At this point the counter will stop the operation by opening or closing an electric circuit. A feature in the design is that the count can be changed by re-dialing while it is still in progress.

BREVITY—Identify by IEN - 4091 If you write the maker

SAWING . . Portable pneumatic tool, also files, ¼ to 1¼ in. stroke

Source: AIR-SPEED TOOL CO.
1502 W. Slauson Ave., Los Angeles 47, Calif.



Improved design in the company's portable reciprocating tool, previously described IEN-12311-48, includes a new valve assembly, tapered internal springs, change in arrangement of exhaust ports, sealing to prevent the entrance of abrasive materials into the operating mechanism. Working stroke of the tool is adjustable between ¼ and 1¼ in. as in the initial design.

The tool takes a saw blade or a file, operates the blade in draw action to employ the tool nose as a resistance surface against the work. The file or saw can be rotated through a complete circle, while the tool is in operation, to follow any irregular outline in the work to be cut.

BREVITY—Identify by IEN - 4092 If you write the maker

MANUFACTURING . . Production facilities illustrated and described in 16-page bulletin

Majestic Co.
1000 E. Market St., Huntington, Ind.

What the company made in World War II, what it makes in the line of civilian products, and its major equipment are summarized in new booklet, "Production Facilities". These facilities are shown in pictures, department by department, along with general facts and layouts of its two plants.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4093 If you write the maker

At Last We've Found An Industrial Truck Motor That WON'T BURN OUT...EVER!

The Secret is Silicone Insulated Motors Exclusive in Automatic Electric Trucks

No Time Out of Service
No Costly Repair Jobs... Because

• Automatic has the only class H motor used in industrial trucks • Has up to 62% greater burn-out protection • Can even operate at 350° fahrenheit

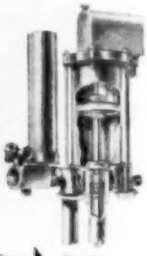
Only cost-cutting Automatic Electric Trucks have exclusive Silicone insulated motors that won't ever burn out . . . saving you costly repairs and money-wasting time-out-of-service. *Not one* single armature has been lost due to insulation failure since revolutionary Silicone protection was adopted in 1946. Write for more free information today.

Trade **Automatic** Mark
109 West 87th Street, Dept. D-1
Chicago 20, Illinois

Trade Automatic Mark ELECTRIC TRUCKS Lifetime LIFE'S LONGER

BREVITY—Identify by IEN - 4094 If you write the maker

BINKS new MATERIAL HANDLING PUMPS save 3 to 6 cents per gallon



Binks Type "A" pump for use in open containers

- Handle light, medium, and heavy materials...lacquers, paints, adhesives, asphaltums.
- Pump from original supply drum. Eliminate handling time.
- Long-stroke, double-acting, air-operated pumps supply material at steady, uniform pressures.
- Self-cleaning.
- Ideal for multi-gun paint circulating systems.

Send today for new Bulletin 700 describing Binks material pumps and related equipment.

Binks MANUFACTURING COMPANY
3120-34 Carroll Ave., Chicago 12, Ill

BREVITY—Identify by IEN - 4095 If you write the maker

"Never leave that till tomorrow which you can do today."

—Ben Franklin's Almanac, 1757

If waste and inefficiency ruin thee and thy country today, how shall thee profit by finding a horseshoe tomorrow?

—Acme Steel Notebook, 1951

The Acme Steel steel strapping and wire stitching equipment you have today means efficient and thrifty production in your packaging, shipping and materials handling operations. Protect it well.

In spite of an increase in productive capacity, U.S. military requirements on some products make it impossible for Acme Steel to meet all the requirements of our more than 50,000 customers. To make the best use of Acme Steel flat strapping, stitching wire and other products available to you, let our representative put Acme Steel's experience and ingenuity to work for you.

In the past 71 years, we have helped our customers weather many a difficult period. We are ready and willing now to help you keep your tools on the job or develop new setups that will increase efficiency in your operations and minimize waste.

Information for ready reference on Acme Steel products is available upon request.

ACME STEEL COMPANY
Dept. IEN-41, 2838 Archer Avenue, Chicago 8, Illinois
We have 46 service offices in the United States and Canada. If not listed in your telephone directory, write us.

ACME STEEL

In 1950 Acme Steel had 9135 stockholders—a growth of 21.1% over 1949. They comprised 3223 men, 3089 women, 2260 joint accounts, 563 trusts, corporations and institutions. 646, or 15.9%, of our employees are stockholders.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHERS and ACME SILVERSTITCH WIRE for box stitching • ACME MORRISON METAL STITCHERS and BOOK STITCHERS • ACME CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, barbed box straps, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, tool mounts, reel stands, coil holders, coil trays.

BREVITY—Identify by IEN - 4097 If you write the maker

Peerless-Electric

TYPE PVS EXHAUST FANS

These fans are "all Peerless"—completely designed and manufactured by The Peerless Electric Company, manufacturer of fans and motors since 1893. Both motor and fan are designed to work together as a unit. **PERMANENT SPLIT CAPACITOR MOTOR**—No internal switches or mechanical parts to fail and cause breakdowns. Totally enclosed to exclude dirt and moisture. **QUIET OPERATION**—Wide heavy gauge steel blades rotating at slow speed to assure rated capacity at low noise level. **FOUR SIZES**—Fans 16", 18", 24", 30" dia.; motor H. P. ⅛, ¼, ⅓, ½; CFM: 2150, 2900, 4550, 7375; frame sizes: 24", 26", 34", 40" square. **HORIZONTAL OR VERTICAL MOUNTING**—Ball bearing in rear hood to take end thrust in all positions. **FURNISHED COMPLETE**—Controller for single speed, 2-speed, or 3-speed, furnished as ordered. **EASY TO INSTALL**—Requires only 4 or 6 lag screws or bolts to mount. **FINISH**—Gray Hammerloid baked enamel. **RATINGS**—According to National Association of Fan Manufacturers and American Society of Heating & Ventilating Engineers. **GUARANTEED** against defective workmanship or material for a period of one year from date of shipment from factory. Registered serial number identifies immediately for spare parts or duplicates. Write for complete specification sheet.

THE PEERLESS ELECTRIC COMPANY • WARREN, OHIO
Established 1893

Peerless-Electric MOTORS·FANS·BLOWERS

BREVITY—Identify by IEN - 4098 If you write the maker

Streamline

your hand labeling with new

Mystik

Self-Stik Labels

FAST! Stick instantly, by pressure, without glue, water or heat. Save time, speed production.

EASY! Solve tough labeling problems, for hard-to-label surfaces or locations.

PERMANENT! Won't dry out, curl up or come loose—yet can be removed without a trace.

BEAUTIFUL! Printed in any color combination, die-cut to any shape. Better labels for every purpose . . . to sell or identify or for instructions.

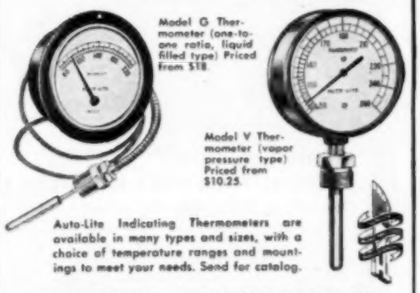
For free samples write:

CHICAGO SHOW PRINTING CO., 2644 N Kildare, Chicago 39

BREVITY—Identify by IEN - 4099 If you write the maker

Depend on AUTO-LITE

FOR TEMPERATURE INDICATION



Model G Thermometer (one-to-one ratio, liquid filled type) Priced from $18.

Model V Thermometer (vapor pressure type) Priced from $10.25.

Auto-Lite Indicating Thermometers are available in many types and sizes, with a choice of temperature ranges and mountings to meet your needs. Send for catalog.

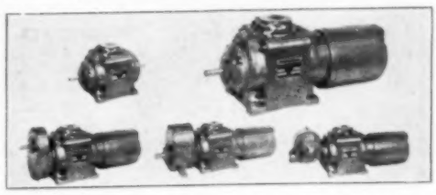
THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION • TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

AUTO-LITE
INDICATING & RECORDING THERMOMETERS

BREVITY—Identify by IEN - 4100 If you write the maker

DRIVE . . Variable speed assembly, non-reversing design, ½ to 1½ hp.

Source: GRAHAM TRANSMISSIONS INC.
3756 N. Holton St., Milwaukee 12, Wis.



Series 150 designates new assembly of four models in the company's line of variable-speed transmissions and motor-equipped drives. Model 150 rates ½ hp., Model 175 rates ¾ hp., Model 200 is 1 hp., and Model 250 is 1½ horsepower. The motors in each case are standard NEMA C-flange type in open, totally-enclosed or explosion-proof design. Input speed can be specified at 1,800 or 1,200 rpm. as compared to the previous 3,600 rpm. in the Series 45 which the new Series 150 replaces.

Assemblies in each size include the variable-speed transmission only, with input and output shafts on opposite ends, the motor-driven standard unit in which standard speed ratio is from 0 to 37 per cent of input speed, and three geared-head assemblies including single and double-reduction helical spur gears and a worm-gear unit. Speeds can be stepped up or down in the spur-gear design. The output shaft can be horizontal or vertical in the worm-gear design.

The new series employs the same tapered spindle and ring assembly in which the non-rotating ring is moved axially to change the transmission ratio. The working parts rotate in oil in the sealed housing. A lever or screw-operated adjustment can be specified. The line includes a selection of standard remote controls for mechanical, electrical, hydraulic or pneumatic actuation to meet requirements.

BREVITY—Identify by IEN - 4101 If you write the maker

ROCK DRILLING . . Hydraulic machine, wheel mounted, also drives anchor bolts

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

The operator of this new Baker-Fletcher Roof Drill and Wrench brings the machine into position by manipulating hydraulic controls. He sets the drilling action in any position in an arc between 45 degrees to either side. He positions a drill and starts the rotating drive and the hydraulic feed. He also can direct water at the operation for wet drilling. When a hole is completed he can change the drill for a wrench and drive an anchor bolt into the mine roof.

The machine measures 97 by 59 in. in length and width. Two heights are 50 and 59 in. for drill-travel capacity to 48 and 66 in. respectively. Wheel-base is 60 inches. Power is supplied by connection to a power drag cable for the built-in electric motor of specified characteristics.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4102 If you write the maker

Fabrication-by-welding is being used by an ever-increasing number of careful, thorough buyers . . . and they are specifying American Welding.

A copy of our new 20-page illustrated catalog will be sent on request.

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

BREVITY—Identify by IEN - 4103 If you write the maker

Production Costs Reduced with FULLERGRIPT Brush

Costly hours of scrubbing plate glass by hand eliminated. Fullergript brushes, a detergent, and a spray of distilled water thoroughly clean glass prior to silvering for mirrors.

Fullergript brush on oyster dredge prevents chips of oyster shells from accumulating on belt. Saves six hours of hand labor every trip.

In many industries the answer to numerous problems of economical processing and of materials handling has been found in Fullergript power brushes. Fullergript strips, in which the brush material is anchored securely in a metal channel, may be formed into any size or shape. To learn what Fullergript can do for you, simply write to . . .

Power Driven

FULLERGRIPT BRUSHES

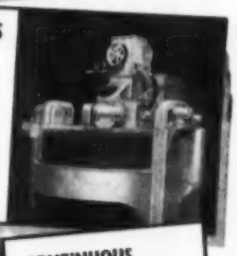
3583 MAIN ST., HARTFORD 2, CONN.

BREVITY—Identify by IEN - 4104 If you write the maker

Let PANGBORN Solve your Blast Cleaning Problem!

BATCH Cleaning: For top-economy batch cleaning specify Pangborn ROTOBLAST* Barrels. Sizes available from 3½ to 28 cubic feet. All models have push-button operation, automatic abrasive recovery and automatic loading device.

SEMI-CONTINUOUS Cleaning: Specify Pangborn ROTOBLAST* Tables. Type LF cleans flat castings; type LG cleans intricate pieces. Type LH, with two tables, lets operator load one table while work is cleaned on the other.



CONTINUOUS Cleaning: Pangborn Continuous-Flo ROTOBLAST* Barrels and one man provide uninterrupted cleaning. Loading and unloading is automatic, work is cleaned as it moves through Barrel.

Pangborn offers ROTOBLAST* equipment for every cleaning need. Full details on Tables, Barrels, Table-Rooms and Rooms are included in Bulletin 214. For your free copy *Mail Coupon Today!*

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

Pangborn *Trademark of Pangborn Corporation

BLAST CLEANS CHEAPER with the right equipment for every job.

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me Bulletin 214 without obligation.

Name.....
Company.....
Address.....
City.....Zone.....State.....

BREVITY—Identify by IEN - 4106 if you write the maker

PRENTISS

"BULL Dog"

MACHINISTS' VISES

Backed by 80 years of time proven acceptance by industry.

•

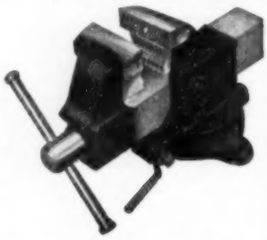
Hundreds of plants have used them and still do.

•

Insist on PRENTISS for that "EXTRA" vise service.

•

Your industrial Distributor can furnish.



Buy PRENTISS Today

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO. MERIDEN, CONN.

BREVITY—Identify by IEN - 4107 if you write the maker

keep costs down

with accurate job time records

CALCULAGRAPH

FIGURES ELAPSED TIME ACCURATELY

PRINTS DATE
STARTING TIME
FINISHING TIME
TOTAL ELAPSED TIME

Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION
— FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

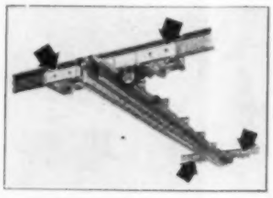
Send complete data on Calculagraph to:

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

BREVITY—Identify by IEN - 4109 if you write the maker

CRANE . . Overhead design, to 10 ton, travel speed to 500 fpm.

Source: AMERICAN MONORAIL CO.
13111 Atkins Ave., Cleveland 7, Ohio



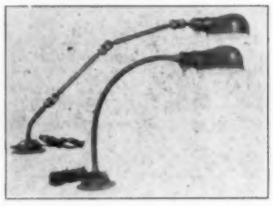
Flangeless wheels mounted in precision bearings are assembled in trunnion housings to support the load on the company's new articulated trolley crane. Side guide rollers are also on anti-friction bearings. The load bar is seated in a saddle trunnion on Timken self-aligning bearings and each end-truck assembly-supporting saddle is similarly seated. The arrangement distributes the load evenly between each of the supporting track wheels, permits operating speeds to 500 fpm. in constant duty with loads to 10 ton.

Crane travel drive is the company's standard design employing pneumatic-tired traction wheels under the craneway. The drive itself can be specified in hydraulic coupling design or with a gear transmission employing a slip-ring motor and gear reducer connected to the drive shaft. The company is prepared to supply the crane for given loads and installation requirements and specified span.

BREVITY—Identify by IEN - 4110 if you write the maker

LIGHTING . . Flexible arm fixtures for incandescent lamps, two designs

Source: FOSTORIA PRESSED STEEL CORP.
1219 Fisher Road, Fostoria, Ohio



Series 400 with a flexible-tube and Series 412 with an arm assembling adjustable flexible joints are recent additions to the company's Localites. Both are designed for use on machine or bench and are furnished with bases to fit a standard outlet box or to bolt to a flat surface.

Switches are in the bases and keyless porcelain sockets are at the opposite ends of the arms, each with a reflector hood carrying a baked-enamel white interior. The hoods rotate through 360 degrees. Wiring is fully enclosed. Exterior finish is baked matte green.

BREVITY—Identify by IEN - 4111 if you write the maker

NEW PRODUCTS . . Influence of the designer shown by photographs of new equipment in picture book

Thomas J. Crowell Co.
432 Fourth Ave., New York 16, N. Y.

"U. S. Industrial Design 1951" titles 190-page book, list price $10, edited by the Society of Industrial Designers. It illustrates a range of new products, describes the design problems involved and how they are met. Typical are household appliances, machinery, automobiles, building interiors.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4112 if you write the maker

Don't Underestimate the power of the BANTAM BULLY!

The amazing Bantam Bully air hammer gives you real power in an easy-to-use size. It is 5" long and weighs only 22 ozs. Exclusive metering trigger regulates the power from a feather touch to a powerful blow. Full speed and power attained on less than 6½ C.F.M. of air.

Use it for scaling, chiseling, peening, tamping, cutting, routing, grooving, caulking, channeling, chipping, driving, drilling, marking, and hundreds of other applications.

Write for full details on the Bantam Bully, Big Bully, Bully blow gun and the Bully Fulflo air filter.

Superior Pneumatic division of **Herbrand Tools**
4758 WARREN ROAD, GARFIELD HEIGHTS, OHIO

BREVITY—Identify by IEN - 4113 if you write the maker

Look NO MAINTENANCE! with STAINLESS STEEL FLOATS

Your product will be better, will require virtually no maintenance, if it is equipped with Chicago's stainless floats. In fifteen years of making welded stainless steel floats, Chicago Float Works has produced many thousands with excellent results under severe operating conditions. This enviable record assures you of the finest, most dependable floats available to build into your products or for replacement use.

CHECK THESE FEATURES

- Standard Diameters 2 to 10".
- Pressures to 1000 lbs.
- Temperatures to 800°F.
- All Standard Spud Connections.
- Top quality 18-8 Stainless Steel.
- Non-corized weld for superior strength, and corrosion resistance available where required.

WRITE FOR FREE CATALOG

CHICAGO FLOAT WORKS, INC.
2326 So. Western Avenue • Chicago 8, Illinois

BREVITY—Identify by IEN - 4114 if you write the maker

It's as easy as this to

ISOLATE VIBRATION and SAVE MONEY

with ISOMODE Pads*

Here's the durable mounting to absorb shock...reduce noise ...cut your maintenance costs. In hundreds of installations, the Isomode Pad has proved to be not only one of the most economical mounts, but also one which does a superior job of isolating vibration.

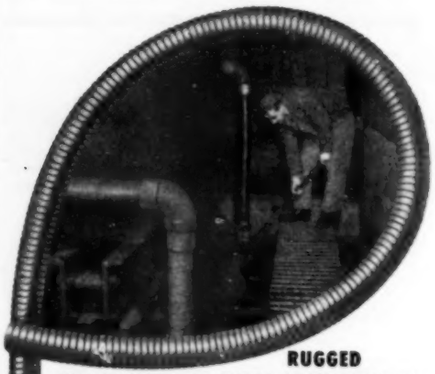
By absorbing forces normally transmitted to floor, Isomode Pads reduce building damage and undue deterioration of machinery. No bolting in most cases.

Made of oil, age- and water-resistant Du Pont Neoprene. Write for details — discover their surprisingly low cost.

**Trade Mark Reg. U.S. Pat. Off.*

THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.

BREVITY—Identify by IEN - 4115 if you write the maker



RUGGED FLEXIBILITY FOR EVERY INDUSTRIAL USE

PENFLEX FLEXIBLE METALLIC TUBING is made to meet every requirement of all industries. From ⅛" I.D. to 30" I.D. bronze, galvanized steel, stainless steel or copper — from an air compressor line to a diesel exhaust, Penflex makes them all for all industries.

Coast to coast — border to border, Penflex installations prove the value of "Flexineering" — the science of applying flexible tubing to fit the particular need of all industries. When you require tubing or hose that is as tight as a pipe but flexible, safe at high temperatures — free from metal fatigue — specify Penflex.

Penflex manufactures a complete line of four wall interlocked and seamless welded corrugated flexible tubing — plus automatic barrel fillers, rivet passers, accessories and fittings. Write for the folder that will help your production "Flexineering."

Pennsylvania Flexible Metallic Tubing Company, Inc., 7200 Powers Lane, Phila. 42, Pa.
Branch Sales Offices: Boston • New York • Chicago • Houston • Cleveland • Los Angeles

PENFLEX

HEART OF INDUSTRY'S LIFE LINES

BREVITY—Identify by IEN - 4116 If you write the maker

AUTOMATIC HUMIDITY CONTROL

The Bahnson HUMIDIFIER combines in one unit the four basic requirements of industrial humidification that have proven especially successful.

High Capacity TYPE L Master Control

1. Atomizes water into a fine mist.
2. Diffuses the mist with room air until completely absorbed.
3. Distributes resulting humidified air uniformly throughout room.
4. Automatically controls the evaporation to maintain a constant relative humidity.

COMPLETE ENGINEERING AND SERVICE DEPARTMENT FOR CONSULTATION

Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

S. C. STIMSON, A-3 VIRGINIAN APTS., GREENVILLE, SOUTH CAROLINA
R. H. ANDERSON, 314 EAST STREET, CROWN POINT, INDIANA
R. T. HODGDON, 1 CLARINA STREET, WAKEFIELD, MASSACHUSETTS
I. L. BROWN, 896 DRUMMY STREET, N. E., ATLANTA, GEORGIA
F. S. FRAMBACH, 703 EMBREE CRESCENT, WESTFIELD, NEW JERSEY
DEWITT CLARK, 933 SOUTH FIGUEROA STREET, LOS ANGELES 13, CALIFORNIA

BREVITY—Identify by IEN - 4117 If you write the maker

you GO with OHIO GREEN

WORLD'S FINEST SLITTER KNIVES AND SHEAR BLADES made in OK Battle Axe, OK Dura Chrome and OK Standard.

The cutters shown are used on gang slitters — side trimmers and for tin plate. They are held to ± .00025 tolerances and are given an extremely high finish. Closer tolerances can be furnished on request.

We also furnish hardened and unhardened spacers with the same close tolerances and high finish as the slitters.

The large shear blade shown is furnished in the above three grades for shearing any type of metal and are made to fit any machine. Send us your inquiries giving quantities and sizes.

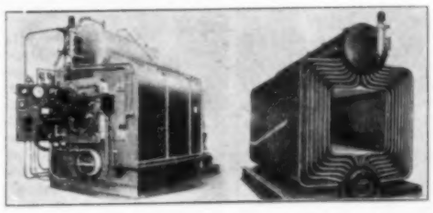
OK ROTARY SHEARS-BLADES are designed to give maximum service — tough as they come!

OHIO KNIFE Co. CINCINNATI 23, OHIO
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF KNIVES

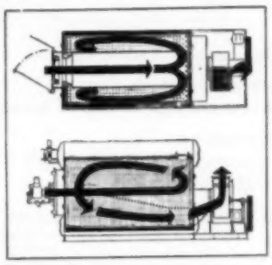
BREVITY—Identify by IEN - 4119 If you write the maker

BOILER . . Self-contained assembly, water tube design, oil and gas fired

Source: ERIE CITY IRON WORKS
1651 East Ave., Erie, Pa.



Three passes are made by products of combustion between the burner in its hinged assembly at the front of this new Keystone boiler and the induced draft blower at the rear. Surfaces exposed to heat transfer are submerged below the water line. The assembly is complete with the two-drum water-tube boiler, standard trim, the burner which handles oil and gas interchangeably, the induced-draft equipment, the instrument panel with its mounted operating controls, the insulated steel casing and the structural base. No special foundation is required. The boiler is ready to run as soon as service and feed-water connections are made.



Thirteen sizes range from 75 to 800 developed bhp. based on heating surface from 357 to 4,000 sq. ft. and capacity at 2,490 to 26,550 lb. of water per hour with feed water at 212 deg. F. and steam at 100-lb. pressure. Working pressure for each of the sizes is 160 lb. and up. No chimney is required other than an outlet connection to the induced-draft fan to vent the gases out of doors. Provision is made for quick access to any of the elements in the assembly. Overall dimensions are approximately 15 to 26½ ft. in length, 6½ to 10½ ft. in width and 9½ to 13 ft. in height. Shipping weights are 20,000 to 70,000 lb. in the range of available sizes.

BREVITY—Identify by IEN - 4120 If you write the maker

HONING . . Machines, fixtures, tools in assembly for specified application

Source: C. ALLEN FULMER CO.
1215-19 First National Bank Bldg., Cincinnati 2, Ohio

Diameter range is ¼ to 30 in.

The company announces the availability of fourteen models of its vertical-spindle honing machine with cylinder-honing fixtures in design to meet given requirements and with ball honing tools in a range of sizes to 30 in. in diameter. The tools are equipped with removable flanges that take stone holders and the hone body. By substituting flanges of different diameters and by using the original holders, one tool can be employed to hone a range of bore sizes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 4121 If you write the maker

ALLIGATOR

CONVEYOR BELT LACING

Every Tooth A Vise*

in Long Continuous Lengths for Conveyor Belts . . . . .

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick— and *any width*.

Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

BREVITY—Identify by IEN - 4122 If you write the maker

Tell Us Your Production Problems . . . We'll Help You Solve Them

"LOGAN" AIR CONTROL VALVES

Model 6245 4-Way, 2-Position

Model 6540 4-Way, 3-Position

- BALANCED PISTON
- COMPACT DESIGN
- EASILY INSTALLED
- SELF-CLEANING

Logan Manufactures 6,975 Standard Cataloged Items

Free Catalog On Request

AIR CONTROL VALVES Catalog 100-4
AIR CHUCKS Catalog 70-1
AIR CYLINDERS Catalog 100-1
AIR and HYDRAULIC PRESSES Catalog 51
COLLET GRIP TUBE FITTINGS Catalog 44
HYDRAULIC CONTROL VALVES Catalog 200-4
HYDRAULIC CYLINDERS Catalog 200-2; also 80-2
HYDRAULIC POWER UNITS Catalog 200-1
SURE-FLOW COOLANT PUMPS Catalog 62

Let Logan Engineers help you design your Air and Hydraulic Circuits.

79 MODELS
Most Models Stock Delivery

Logan Air and Hydraulic Equipment
LOGANSPORT MACHINE CO. INC 811 Center Ave. Logansport, Ind.

FLUID POWER SPECIALISTS SINCE 1916

BREVITY—Identify by IEN - 4123 If you write the maker

LOTS OF THINGS ARE DONE BETTER WITH PRESSURE-SENSITIVE TAPES

Handy as your slide rule . . . useful as your right hand . . . pressure-sensitive tapes calendered from VINYLITE Brand Resins are finding new time- and money-saving applications every day in practically every industry. Once used mainly for insulation and repairs in electrical apparatus, these remarkable, colorful, tight-sticking tapes are demonstrating unsuspected versatility.

They are dependable bottle cap seals. They protect component parts against harm during handling, shipping, even use. They mark traffic lanes in plants and mills. They seal up holes and leaks, often eliminating many rejects. They weatherstrip window frames, and form welting for leather and canvas goods.

Highly conformable, neat appearing and strongly adherent—yet easily strippable—these stretchy tapes made from VINYLITE Resins strongly resist water, alkalies, most strong acids, oils, greases, corrosive atmospheres, sunlight, heat and cold.

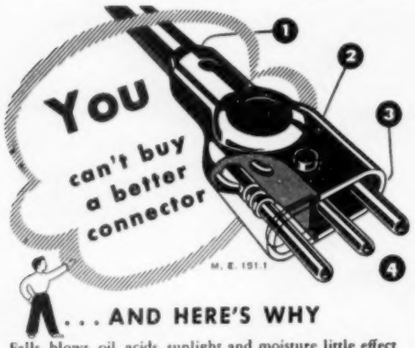
You, too, can find a profitable application for them. It's worth looking into. Write Dept. JX-3.

Data courtesy Minnesota Mining & Manufacturing Co., St. Paul 6, Minn., producers of "Scotch" Brand Pressure-Sensitive Tapes.

Vinylite BRAND **RESINS**

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N.Y.

BREVITY—Identify by IEN - 4125 If you write the maker



. . . AND HERE'S WHY

Falls, blows, oil, acids, sunlight and moisture little effect the life or performance of JOY electric plugs or receptacles. Molded as one-piece Neoprene units they can't crack or shatter and won't become "out-of-round". Before you buy, it will pay you to learn why these and other worthwhile features have made them an outstanding choice of American industry.

1. Sturdy one-piece cable-connector assembly.
2. Safe, long lasting resilient Neoprene jacket.
3. Water-Seal prevents moisture infiltration.
4. Contacts firmly embedded in connector body.

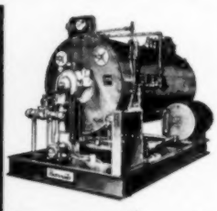
Consult a JOY Engineer or write for your free copy of Bulletin MC108 on the JOY electric connector family today.

100 YEARS OF ENGINEERING LEADERSHIP—1851-1951

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

BREVITY—Identify by IEN - 4126 If you write the maker

FOR DEPENDABLE
HOT WATER HEATING
At Lowest Cost!



Powermaster®
HOT WATER BOILER UNITS
15 to 500 H. P.

Fully automatic. Completely "self-contained". For light oil, heavy oil, gas and gas/oil firing. Reduce operating costs as much as 40%-save man hours. Fully approved. Widely used in leading industrial plants, schools, hospitals, institutions, etc.

WRITE FOR BULLETIN

ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa. Established 1885

BREVITY—Identify by IEN - 4127 If you write the maker

Small HEACON DAMPER Applications that Pay for Themselves . . .

. . . IN FUEL SAVINGS
. . . IN REDUCING STARTING TIME LAG
. . . IN ELIMINATING ATTENDANT COSTS

A 200 H. P. Keeler Boiler supplies power for this modern laundry. A Heacon Type L H Damper, located in the duct connecting the outlet of the boiler to a P-D Fan Stack, was installed to maintain pressure during banking periods.

Prior to installation, the boiler was banked at 5:30 P.M., fired to 125 psig at 1:00 A.M. and at 6:30 A.M. available pressure for starting would average 30 psig. Since installation of the Heacon Damper, the oil burners are shut down at 4:45 P.M. and the damper closed. At 6 A.M. when the stop valve is opened, the boiler pressure is 109 psig. This sequence is illustrated by the pressure chart. Approximately 300 gals. of oil are said to be saved each week. In addition, the cost of a watchman to fire the boiler at 1:00 A.M. is saved and an automatic fire alarm system has reduced insurance rates.

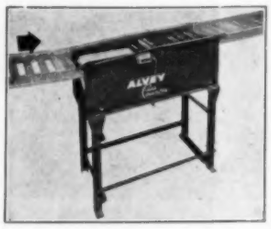
Your critical damper problems, large or small, can be solved by Heacon Dampers, at a cost that will pay for itself in six months. Our engineers will be glad to show you how.

THE THERMIX CORPORATION
GREENWICH CONN.
Canadian Affiliates: T. C. CHOWN, LTD.
1440 St. Catherine St. W., Montreal 25, Que. • 50 Abell St., Toronto 3, Ont., Can.

BREVITY—Identify by IEN - 4128 If you write the maker

COUNTING . . Roller conveyor unit counts packages, speed to 40 per min.

Source: ALVEY CONVEYOR MFG. CO.
9302 Olive St. Road, St. Louis 5, Mo.



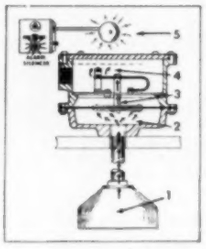
Case Counter is a new self-contained conveyor-section assembly that includes a motor-driven belt-type inlet end, a package barrier, an air-operated package release, a live-roller discharge, associated limit switches, and a mechanical or electrical counter. The unit applies in a roller-conveyor line. It provides 16¼ in. between rails as standard. Other widths can be specified.

The motor-driven belt carries packages as they come from one side of a conveyor line to the barrier. Contact with the barrier causes an air cylinder to raise the front of the package so the belt can propel the package over the barrier and deposit it on the live-roller discharge side. At the same time the counter registers one. The barrier resets itself as soon as the package has passed and is ready for the next one. The positive stop prevents accidental release of a following package so the count will be accurate.

BREVITY—Identify by IEN - 4129 If you write the maker

SWITCH . . Pressure operated to signal a change in liquid level

Source: AUTOMATIC CONTROL CO.
1003-7 University Ave., St. Paul 4, Minn.



Hi-Level trade names a new switch in the company's Autocon line for vertical installation above a body of liquid so the open bell chamber at the bottom of its assembly stands just above the liquid. Increased pressure resulting from rise in the liquid, to compress air trapped in the bell, acts upon a diaphragm to move the contacts in an electric switch and close an alarm or signal circuit. When liquid level recedes, the pressure is relieved and the switch returns to open position.

BREVITY—Identify by IEN - 4130 If you write the maker

MANAGEMENT . . Book about monopoly and free enterprise in American industry

Twentieth Century Fund Inc.
330 W. 42nd St., New York 18, N. Y.

Findings of a survey are stated in new 506-page book, "Monopoly and Free Enterprise," list price $4. One of the findings is that any arbitrary attack upon bigness as such in American industry would be unwise and unnecessary. The book presents recommendations on current practice.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4131 If you write the maker

LUSTRA Double Duty Lamps cut replacements in 1/2

YOU'LL REALLY go to town on savings with the *Lustra Double Duty Lamp*. This lamp is the perfect answer for high bay and other locations that are hard to reach. It's specially designed for maximum life . . . saves money by slashing replacement and maintenance costs.

And for MORE savings . . .

LUSTRA FLUORESCENT TUBES . . . more light . . . longer life. Full range of colors: Soft White, Warm White, Deluxe Warm White, 3500° White, Cool White, Deluxe Cool White, Daylight.

LUSTRA REFLECTOR LAMPS, with inside silvered sealed beam reflector, direct increased light on the work area . . . give extra service life!

Send for catalog and sample lamps to Lustra Corporation, Dept. **P-4,** 36 Washington St., Brooklyn 1, New York.

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

BREVITY—Identify by IEN - 4132 If you write the maker

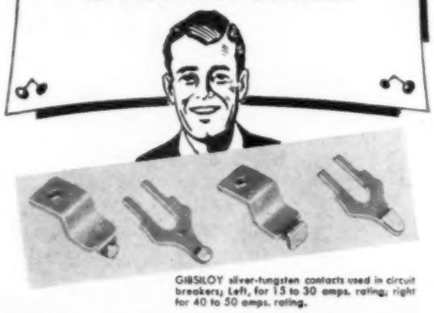
DARNELL CASTERS

SPEED
PRODUCTION

DARNELL CORP. LTD.
LONG BEACH 4, CALIFORNIA
60 WALKER ST., NEW YORK 13, N. Y.
36 N. CLINTON, CHICAGO 6, ILL.

BREVITY—Identify by IEN - 4133 If you write the maker

Let Gibson engineers help you make *Efficient* use of CRITICAL MATERIALS in Electrical Contacts



GIBSILOY silver-tungsten contacts used in circuit breakers; Left, for 15 to 30 amps. rating; right for 40 to 50 amps. rating.

Efficient use of critical materials in contacts involves (1) the determination of the best size and design, and (2) the selection of the right material for the function to be performed.

Extremely small amounts of contact materials often perform big jobs. In small circuit breakers, contacts weighing less than ½ gram are capable of interrupting 5000 amps. at 125 volts, and contacts weighing 2½ grams interrupt 10,000 amps, at 600 volts.

Devices otherwise similar in design often employ contacts of different sizes depending upon current and voltage ratings, as shown in the illustration. On high voltage breakers, the size of both main and arcing contacts is varied depending upon KVA rupturing capacity as well as current carrying capacity.

Similarly, contacts of different materials are used for various ratings—the less critical or less costly materials being used for the lower ratings. For example, GIBSILOY silver-tungsten contacts are used for circuit breakers protecting transformers rated at 10 KVA to 25 KVA. In similar circuit breakers for transformers rated at 3 KVA and 5 KVA, contacts of the same size are used but are made of GIBSILOY silver-nickel for the moving contacts and GIBSILOY silver-graphite for the stationary contacts, thus conserving critical tungsten.

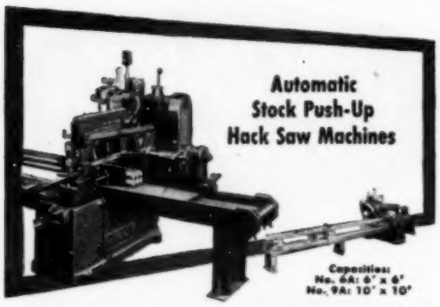
Consult Gibson engineers regarding your designs or write for contact application questionnaire.

Serving Industry with Quality Electrical Contacts and Contact Assemblies.

Gibsiloy ELECTRICAL CONTACTS
Manufactured by GIBSON ELECTRIC COMPANY
8353 Frankstown Ave., PITTSBURGH 21, PA.

Representatives in Boston, Chicago, Detroit, New York, Rochester (N. Y.), Los Angeles, San Francisco, Seattle.

▼ BREVITY—Identify by IEN - 4135 If you write the maker ▼



Feed, Measure, Cut-Off—AUTOMATICALLY

These automatic stock push-up hack saw machines are not new. MARVEL built the first practical bar feed hack saw machines, over 30 years ago. The sound, proven, basic principle of these machines has never changed—but they have been constantly improved and refined. Today they are still the leaders—the most practical, fastest, most accurate, most productive cutting hack saw machines built. No matter what your cut-off work, let us recommend the MARVEL saw that will give you true economy, speed and accuracy at an attractive price.

Write for Catalog

MARVEL Metal Cutting **SAWS**
Better Machines—Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

▼ BREVITY—Identify by IEN - 4136 If you write the maker ▼

WECO DROP-SIDE SNATCH BLOCKS

RUGGED — TOUGH
EASY TO HANDLE

Forged steel hook and sheave . . . induction hardened extra heavy sheave pin . . . 3/8" steel plate sides . . . self-lubricated "Super Oilite" bearing give WECO SNATCH BLOCKS strength for heavy hoisting, and durability for long life.

The patented "Drop Side" makes it easy to string and unstring the block. Instead of the usual "needle threading" procedure just remove the wing nut, raise side, insert line, drop the side, and replace the nut.

Specify WECO SNATCH BLOCKS for greatest service and longest life. Write for bulletin.

WELL EQUIPMENT MFG. CORP.
Inventors of Oilfield Equipment
HOUSTON 1, TEXAS
Exclusive Representative Outside Mid-Continent Area:
CHIKSAN COMPANY
Bros Calif New York 7
Export Sales: CHIKSAN EXPORT COMPANY, Bros Calif New York 77

WECO
Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment

▼ BREVITY—Identify by IEN - 4137 If you write the maker ▼

600 CU. FT. DIESEL ENGINE DRIVEN COMPRESSOR

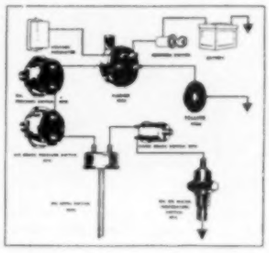
WRITE FOR BULLETIN 5025

SCHRAMM INC.
The Compressor People
WEST CHESTER, PA.

▼ BREVITY—Identify by IEN - 4138 If you write the maker ▼

SIGNALING . . Pressure, temperature, liquid level unit protects equipment

Source: ROCHESTER MFG. CO.
199 Rockwood St., Rochester 10, N. Y.



Tellite trade names a new assembly of switching units actuated by pressure, temperature, liquid level, with a flasher unit and signal lamp to indicate abnormal conditions in equipment. Separate switches with individual flashers and indicator lamps can be employed for given conditions. Any required number of the switches can be connected in series to sound a warning when any part of a complete installation requires attention.

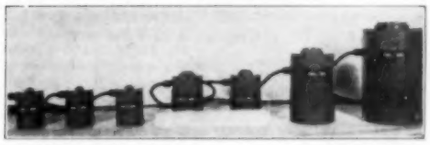
Pressure range is 0 to 200 lb. for the pressure switch, 175 to 250 deg. F. for the temperature switch. Each is available to close or open the circuit on rising or falling conditions. The flasher provides a 15 to 20-sec. time delay to prevent signaling an unimportant transient action. It is designed for operation on a 6 or 12-volt power circuit.

A feature is in the fact that the signal lamp shows a dim light when conditions are normal. It recurrently flashes between bright and dim on an abnormal condition. If the light is not showing at all there is trouble in the circuit that calls for immediate investigation.

▼ BREVITY—Identify by IEN - 4139 If you write the maker ▼

TESTING . . Strain gage load cells for tension and compression tests

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia, Pa.



Series U-1 is new design of the company's Type-U hermetically-sealed assembly of Type SR-4 strain gage in a cylindrical housing, previously described IEN-1564-49. Female threaded ends provide for connection to fittings of various designs in application of loads in tension or compression. In each case slight variation of gage length and corresponding change in electrical resistance results under loading. This change is amplified electronically and is employed to actuate indicators or recorders or controllers depending on the individual test set-up.

Load capacities range from 500 to 50,000 pounds. Loads in either tension or compression can be carried without mechanical failure to three times these ratings. Repeated overloading, to 120 per cent of rated capacity, will not result adversely. The smallest unit measures 3 in. in diameter by 4 in. in housing height. The largest measures 6½ by 11½ inches. Current input on ac. or dc. is 4 to 8 volts. Connection is made at a fitting in the housing side.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 4140 If you write the maker ▼

Two Masoneilan Controllers

That Provide Precise Control at Moderate Cost

IN A MAJORITY OF PRESSURE APPLICATIONS IN MANY TEMPERATURE APPLICATIONS

No. 2700 Pressure Controller — **No. 3700 Temperature Controller**

NOTE THESE MASON-NEILAN FEATURES

1. Same basic control mechanisms for pressure and temperature instruments insure simplicity, permit standardization of parts.
2. Pneumatic feedback — usually found only in more expensive proportional controllers . . . precise response.
3. Control point setting mechanism provides extreme accuracy of adjustment and easily read expanded index scale.
4. Proportional band adjustment between 3 and 50%.
5. Compact and sturdy case and internal mechanisms; all important internal parts of bronze, brass or 18-8 stainless steel.
6. Control action reversible with either bourdon or bellows.

Masoneilan models 2700 pressure and 3700 temperature controllers meet many industrial application requirements. They are moderate in cost . . . provide excellent performance, precise proportional response and ease of adjustment.

MASON-NEILAN REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U.S.A.

▼ BREVITY—Identify by IEN - 4141 If you write the maker ▼

SPARE PARTS BOXES

to meet Government specifications

FOR ARMY AND NAVY ORDERS

Many Army and Navy contracts require that spare parts be furnished in specially designed boxes. Stackbin has specialized in the fabrication of spare parts boxes to meet exacting Government specifications. The assemblage is complete, including all-welded sheet metal construction with proper fittings and hardware. In any quantity, in minimum time.

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

▼ BREVITY—Identify by IEN - 4142 If you write the maker ▼

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

▼ BREVITY—Identify by IEN - 4143 If you write the maker ▼

CHOICE OF THE ARMY FOR *Dependable Controls*

GUARDIAN RELAYS

Once again the arsenal of democracy gears to meet the demands of the Armed Forces to preserve peace thru preparedness. Once again Guardian is a *choice supplier* of electrical controls for all branches of the Army.

The Series 335 D.C. Guardian Relay shown above is available with the A.N. Connector Plug, Octal Plug and Lug Header hermetic seal containers. Packs loads of power over a wide operating range, withstands the rigors of dust, moisture, salt air, temperature changes, vibration and impact. WRITE OR WIRE . . . FREE CATALOG

GUARDIAN ELECTRIC
1620-D W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN - 4144 If you write the maker

BLOW COOL AIR TO HOT SPOTS without ducts!

"Hy-V" Air Jets project a concentrated stream of fresh air as far as 35 feet. Built in two models—with bracket for wall mounting or with portable wheeled stand. Capacities up to 12,000 cubic feet of air per minute. Send for *free bulletin.*

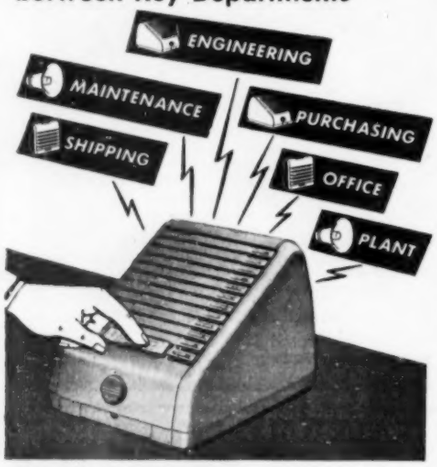
HY-V AIR JETS

DeBOTHEZAT FANS DIVISION
American Machine and Metals, Inc.
East Moline, Illinois

BREVITY—Identify by IEN - 4145 If you write the maker

Step Up Production

with faster communication between Key Departments



EXECUTONE Intercom puts every department at your fingertips—*instantly!*

Production moves faster when you don't have to wait for information. With Executone you talk to any department, anywhere in your office or plant—*instantly!* No time lost running back and forth. No waiting on "busy" inside phones. You get more work done—*faster!*

In the NEW Executone voices are amazingly crisp and clear. Installed and serviced by Executone-trained technicians. Low cost Executone soon pays for itself in dozens of ways.

Executone

GET THE FACTS **INTERCOM SYSTEMS**

EXECUTONE, INC., Dept. D-5
415 Lexington Ave., New York 17, N. Y.

Without obligation, please send me full data on Executone Intercom. I am particularly interested in:

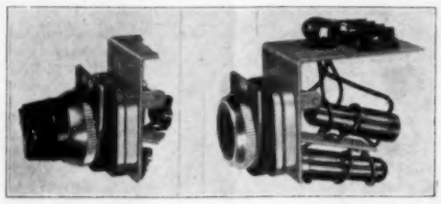
- ☐ INTER-OFFICE COMMUNICATION
- ☐ INTRA-PLANT COMMUNICATION
- ☐ MATERIALS HANDLING CONTROL
- ☐ SWITCHBOARD RELIEF
- ☐ INVENTORY CONTROL
- ☐ LOCATING PERSONNEL

Name..... Title.....
Firm.....
Address..... City.....

BREVITY—Identify by IEN - 4147 If you write the maker

SWITCH . . Single pole mercury, single or double throw safety design

Source: PANALARM PRODUCTS INC.
7212 N. Clark St., Chicago 26, Ill.



Pushbutton or knob operation can be specified for this new mercury switch in which the contacts are sealed inside the mercury housings and there is no danger of explosion due to sparking. The switch is designed for vertical panel mounting in single or double-throw action. The pushbutton design employs a spring to return the mercury elements to normal position when the button is released. The knob assembly holds in "on" or "off" position. Rating is to 15 amp. on 110-volt ac. in standard assembly.

BREVITY—Identify by IEN - 4148 If you write the maker

LUBRICATING . . Pressure dispensers, tools and truck for oils and grease

Source: J. N. FAUVER CO.
45 W. Hancock Ave., Detroit 1, Mich.

Lubri-Kit is a new assembly of an electrically operated barrel pump mounted on a 400-lb. grease drum, a hand transfer pump on a 100-lb. oil drum, a storage box for tools, miscellaneous fittings and a hand gun, the necessary hose, nozzles and gages, all mounted on a hand truck for portable application. The truck base measures 30 by 60 inches. The casters are 10-in. rubber-tired design, two rigid and two swivel, as illustrated.

BREVITY—Identify by IEN - 4149 If you write the maker

EXTINGUISHING . . Book of fire codes dealing with extinguishing and alarm equipment

National Fire Protection Association
58-62 Batterymarch St., Boston 10, Mass.

1951 Edition of Vol. 4 of the National Fire Codes prints texts of 38 standards on extinguishing and alarm equipment in its 848 pages. List price is $4. It covers sprinklers, water supplies, portable extinguishers, hose. One chapter describes how to organize and equip employee fire brigades.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4150 If you write the maker

Economy ELEVATING Table

For feeding sheet stock, supporting fabricated frames, handling heavy dies, or as a portable work bench. All four sides are accessible to the user.

Lifting and lowering load is hand operated. Crank handle can be attached and operated from either end, with two speed lifting. Self locking worm and screw elevating mechanism holds work at any height without danger of falling. A foot operated floor lock holds table stationery when in use.

ELEVATING TABLE EXTENDED

This standard designed table has a capacity of 2,000 lbs. Special designs can be built to suit your requirements.

PRICE F.O.B. CHICAGO $310.00
Subject to current discount

ECONOMY ENGINEERING CO.
4502 W. Lake St.,
Chicago 24, Ill.

BREVITY—Identify by IEN - 4151 If you write the maker

Know the scope of the MARSH line of pressure gauges

There are literally thousands of combinations of types, ranges, case styles and connections in the broad Marsh line of pressure, vacuum and compound gauges. As a result, gauge requirements that would be "special" to others are often standard to Marsh.

This means that we can meet your gauge needs better and more economically . . . whatever the service condition, quantity or design requirement. To know the scope of Marsh Instruments just ask for the new fact-filled catalog.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept.: 155 E. 44th St., New York 17, N. Y.

BREVITY—Identify by IEN - 4152 If you write the maker

Gaskets like this for Freon condensers may not be your packing problem, but whatever it is . . . high pressures, high temperatures, chemicals, refrigerants, petroleum, food or other products . . . Raybestos-Manhattan has a packing or gasket designed for the job. Your nearby R/M distributor will help you solve your problem. Or write for the new R/M Packing Catalog.

R/M PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.
FACTORIES: Bridgeport, Conn.; Manheim, Pa.; No. Charleston, S.C.; Passaic, N.J.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Asbestos Textiles Mechanical Rubber Products • Abrasive and Diamond Wheels • Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings • Fan Belts Radiator Hose • Powdered Metal Products • Bowling Balls

BREVITY—Identify by IEN - 4154 If you write the maker

UPTEGRAFF

Dry Type Transformers

for Indoor or Outdoor Service

You can reduce your power costs by installing Uptegraff Dry Type Transformers near your "load centers." Made with either Class A or Class B insulation as required, and built in standard or special designs, Uptegraff Dry Type Transformers are efficient and dependable.

Write for illustrated bulletin.

R. E. UPTEGRAFF MANUFACTURING CO.
THOMAS STREET . . . . SCOTTDALE, PENNSYLVANIA
Makers of Power · Distribution · Instrument · Specialty Transformers

BREVITY—Identify by IEN - 4155 If you write the maker

WARRICK

SIMPLE
RELIABLE
ACCURATE
FLOATLESS

LIQUID LEVEL CONTROLS

ELECTRODE TYPE

HIGH & LOW LEVEL ALARMS
HIGH & LOW LEVEL CUTOFFS
MULTI-LEVEL SIGNALS
PUMP CONTROLS
DUPLEX & MULTIPLE PUMP ALTERNATORS
LIQUID METERING
CONDENSATE CONTAMINATION DETECTION
SPECIAL CONTROLS & PANELS

WRITE FOR CATALOGUE

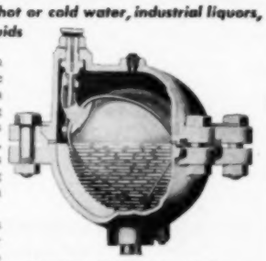
CHARLES F. WARRICK CO.,
18254 HAMILTON AV., DETROIT 3, MICH.

BREVITY—Identify by IEN - 4156 If you write the maker

How to get rid of ACCUMULATED AIR

in pipe lines carrying hot or cold water, industrial liquors, sewage and other liquids

The accumulation of air in water lines under pressure presents the engineer with many problems. Air, lodging at peaks in the line, reduces the effective area of the pipe, creates a friction head, lowers the entire line's pumping capacity, and may result in serious water hammer.
Simplex Air Release Valves bring a sure, efficient cure for these difficulties. Easy to install, simple in design, positive in operation . . . they vent accumulated air automatically before it can cause damage. To learn how you can avoid accumulated-air troubles, send without obligation for our new bulletin



Simplex Air Release Valve

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 30 years.

Write for free bulletin to Simplex Valve & Meter Co., Dept. 4, 6717 Upland St., Phila. 42, Pa.

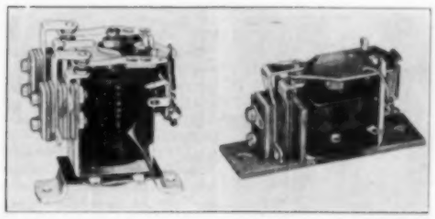
IT'S SIMPLEX IT'S ACCURATE

SIMPLEX
VALVE AND METER COMPANY

BREVITY—Identify by IEN - 4157 If you write the maker

RELAYS . . Plate circuit units particularly for electronic circuits

Source: POTTER & BRUMFIELD
264 N. Main St., Princeton, Ind.



Series IM, to the left in the illustration, and Series LS to the right are two new plate-circuit relays for sensitive operation in electronic control and actuating circuits. Series IM is available in both single-pole and double-pole assemblies for single and double-throw operation, normally opened or normally closed. The single-pole unit operates on .015 watt. The double-throw design takes .070 watt. The $\frac{1}{16}$-in. silver contacts will carry 5 amp. on 110-volt ac.

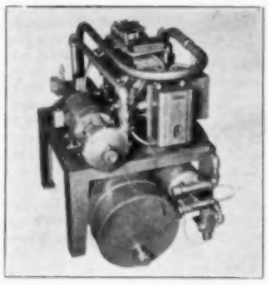
Dimensions are 2¼ by 1⅝ by 2⅝ in. in single-pole assembly, 2¼ by 2⅛ by 2⅝ in. in double-pole arrangement. Coil resistance is subject to specification with 2,500, 5,000 and 10,000-ohm windings in stock. The design includes an adjustable armature-return spring and a screw to set ratio between pull-in and drop-out current in the field.

Series LS is a non-adjustable assembly, preset at the factory for sensitivity and differential. It is available in single-pole double-throw arrangement with contact rating 5 amp. on 110-volt ac, and windings for 2,500, 5,000 and 10,000 ohms. Nominal operating power is .2 watt. Dimensions are 2⅝ by 1¼ by $1\frac{1}{16}$ inch. The company will advise on application.

BREVITY—Identify by IEN - 4158 If you write the maker

REFRIGERATING . . Compressor and heat exchanger for fluid cooling

Source: ACME INDUSTRIES INC.
911 N. Mechanic St., Jackson, Mich.



Self-contained design characterizes the assembly of this new refrigerating equipment in which the compressor and condenser are combined with an exchanger and circulating pump for process-liquid cooling. Examples are supplying water for drinking and process use, lubricant and coolant and process-solution cooling.

Six sizes in the line rate 2 to 15 hp. and have maximum water rates at 12 to 83 gpm. Heat rating is 25,000 to 177,000 btu. per hour. The two largest sizes employ dual compressors rating 5 and 7½ hp. Each has independent refrigerating circuits to permit sequence starting and step control in accordance with load. Flow-Cold Chiller is the designation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4159 If you write the maker

. . . new handy selector for pump packings

This handy new packing selector gives you brief, specific data on ten popular styles of Johns-Manville Packings that serve over 90% of all pump packing applications . . . shows you where to use each style for greatest efficiency and economy.

Here's the quick, easy way to find out about lower packing costs . . . to get higher efficiency and longer life from packings. Write for your copy to Johns-Manville, Box 290, N. Y. 16, N. Y.

JM

Johns-Manville PACKINGS & GASKETS

BREVITY—Identify by IEN - 4160 If you write the maker

STOP HYDROSTATIC PRESSURE LEAKS

THROUGH CRACKS or HOLES IN UNDERGROUND WALLS with

SEEP-SEAL

STOPS THE LEAK IN 2 MINUTES

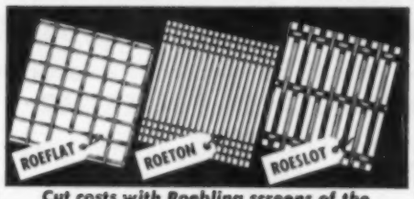
Water seepage, even hydrostatic pressure leaks, commonly found in underground concrete structures, are no longer a difficult problem to overcome. A simple, quick and most effective remedy is found in Seep-Seal. This amazing new formula, mixed with Portland cement, and inserted in any crack or actual hole in concrete, will set within 2 MINUTES to shut off ALL leakage. Ideal for manholes, elevator pits, reservoirs, subways, mine-shafts and similar structures. Also widely used in plaster-consistency for damp-proofing floors and walls.

Write for complete details and prices today. Immediate shipments

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

BREVITY—Identify by IEN - 4161 If you write the maker

AGGREGATE SCREENS



Cut costs with Roebling screens of the right wire . . . right construction

FOR INCREASED service life, Roebling manufactures aggregate screens in Roeflat construction for maximum wearing surface where abrasion is high . . . in Roeton construction to afford increased screening capacity . . . in Roeslot construction for highest screening capacity. Each of these screens is made of either Abraso (high carbon steel), Roetemp (oil tempered steel), or of stainless steel, monel or other alloys.

Send today for Aggregate Screen Catalog W-903 and information that will help you choose the right wire and construction for top service.

WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

BREVITY—Identify by IEN - 4162 If you write the maker

NOW! A wiping tissue 100% grit-free

To make your cleaning operation efficient—economical. Fresh! Soft! *Disposable!* Kimwipes* industrial wiping tissues. Polish finished surfaces without scratching. Blot up to 15 times their weight in liquids. And so inexpensive, you can use a new tissue every time.

*T. M. REG. U. S. AND CAN. PAT. OFF.

AUTOMATIC SERVE-UP PACKAGES

Write for further information and name of the Kimwipes distributor nearest you.

Kimberly-Clark Corporation, Neenah, Wisconsin

BREVITY—Identify by IEN-4163 if you write the maker

WRITE TODAY!

DICO'S WHEEL CATALOG Free!

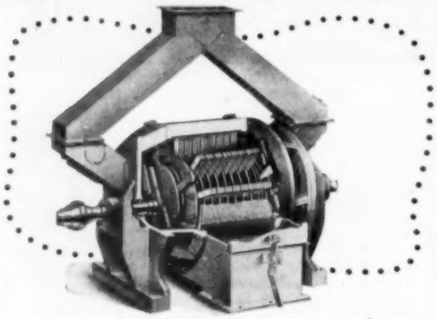
A UNIQUE CATALOG SIMPLIFYING YOUR WHEEL ENGINEERING PROBLEMS

A MODERN LINE OF INDUSTRIAL RUBBER WHEELS DIAMETER 6"—18"

DICO CORPORATION
402 S.W. 16th ST., DES MOINES 5, IOWA

BREVITY—Identify by IEN-4164 if you write the maker

For fine granulation and uniform quality of product
---PRATER *Triple Reduction*
DUAL-SCREEN PULVERIZER

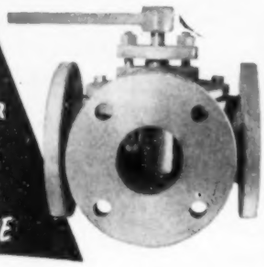


Make sure you have the whole story on the use of Prater Pulverizers and the advantages of Granular Grind in the chemical, food, pharmaceutical, oil bearing seed, distilling, packing, wood, ceramic and feed mill industries. Get new edition of illustrated book. No obligation.

PRATER PULVERIZER COMPANY
1536 So. 55th Court Chicago 50, Ill.

BREVITY—Identify by IEN-4165 if you write the maker

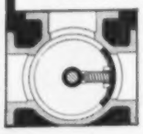
The simplicity of HONEYWELL 3-WAY TRANSFER VALVES will SAVE YOU MONEY and SPACE



THE HONEYWELL transfer valve is a simple, compact valve designed for diverting flow from one line to another—such as cooling water from one condenser to another or oil from one strainer to another. It replaces two conventional valves and fittings. Operates by movement of single lever . . . no chance of opening or closing both lines simultaneously.

Sizes 1½ to 8 inches . . . straight-way or three-way . . . screwed or flanged. Available in high tensile iron with iron or bronze trim; bronze with bronze trim. Other materials and larger sizes on request. Body ratings 125-150 lbs. ASA facing and drilling. Maximum inlet pressures 30 psi to 10 psi. Cost is low . . . act quickly.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY, *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

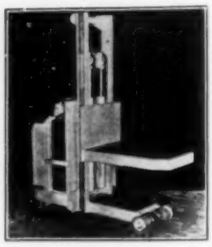


Honeywell
VALVE PRODUCTS

BREVITY—Identify by IEN-4166 if you write the maker

TRUCK . . Power lift design for 2-ton tiering duty in narrow aisles

Source: LYON-RAYMOND CORP.
35-79 Madison St., Greene, N. Y.



New 2-ton unit has been added to the company's Spacemaker truck, previously described IEN-2150-50, in an original 1-ton design. The new truck is available with a 24-in. platform width and lengths ranging from 30 to 48 inches. Lowered platform height can be 7 or 11 inches. Standard mast height is 83 in. with 58 in. of elevation as specified. Wheels are equipped with rubber tires. Drive is at a 10-in. wheel. Stabilizing action is provided by two 7-in. caster wheels on a spring-suspended swivel assembly.

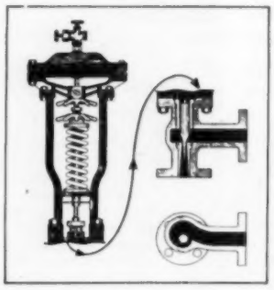
The truck permits stacking at right angles from aisles only 24 in. wider than the load length. Thus a 36-in. skid platform can be turned and right-angle stacked from a 5-ft. aisle.

The operator rides and controls the truck movement at a hand wheel and switch. Elevating is by hydraulic pressure supplied by a motor-driven pump. Travel is by motor connection to the left rear wheel which constitutes the drive and steering mechanism. At the right rear is the swivel caster.

BREVITY—Identify by IEN-4167 if you write the maker

VALVE . . Diaphragm operated particularly for flashing condensate

Source: SWARTWOUT CO.
18521 Euclid Ave., Cleveland 12, Ohio



Type V10 is a new flow-regulating valve to handle liquid at a high pressure drop, particularly flashing condensate, where high velocity impingement is a serious factor. The valve employs a scroll inlet, an expanding outlet and has seat, disc and guide sleeves made of hardened and ground stainless steel. Sizes range from 1 to 4 inches in a line.

The smallest is available for three pressures at 150, 300 and 600 pounds. The largest is made in 150 and 300-lb. capacity. Hot-water rating on 100-lb. pressure drop measures from 23,000 to 360,000 lb. per hour. Diameter of the diaphragm housing is 12½ and 14½ inches. Overall height is 39 and 40 in. in the available range.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

FIND WHAT YOU WANT?
See the suggested procedure in the index, page 114

BREVITY—Identify by IEN-4168 if you write the maker

MERRILL
MATERIALS HANDLING
DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVE., MASPETH, N. Y.

BREVITY—Identify by IEN-4169 if you write the maker

MELRATH GASKETS

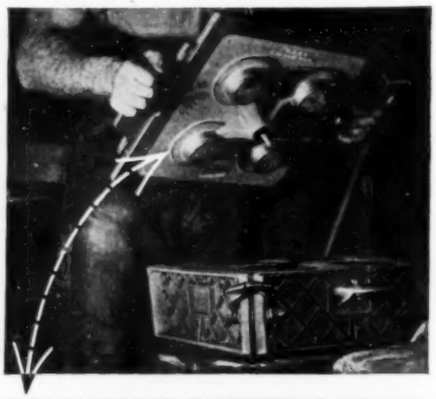
DRUM PLUG GASKETS

Made from any desired material or combination of materials. Resilient — tightened with little torque — remain tight under all temperature changes. For gasoline, kerosene, benzol, alcohol, fuel oil, lubricating oil, paraffine, paint, lacquer, dye, chemicals, etc.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

BREVITY—Identify by IEN-4170 if you write the maker



MATCH PLATE MOUNTING BOARD
COSTS CUT 84%

Huge material savings and rugged resistance to wear—qualities that spotlight GPX, Georgia-Pacific's plastic-faced plywood, as a "natural" for foundry match plates.

GPX has saved up to 84% on match plate mounting board costs for the Cooper Alloy Foundry Co., of Hillside, N. J., world's largest producer of stainless steel castings. They put GPX to the test and report that:

GPX doesn't warp or split under the pressure and violent vibration that moulding machines subject it to. Silky-smooth and moisture resistant, GPX has drastically cut refinishing costs and rejects; hot, damp moulding sand cannot adhere to or penetrate its armor-hard surface. GPX is stable, doesn't shrink or warp in repeated use or prolonged storage.

GPX in exclusive 93/93 grade, and other specialized GPX grades, for concrete form use, general use, exterior and interior painting, have been working production miracles and cutting costs for hundreds of manufacturers—how about you?

GEORGIA—PACIFIC
PLYWOOD COMPANY

Offices or Warehouses in: Augusta, Birmingham, Boston, Chicago, Columbia, Louisville, Memphis, Nashville, Newark, Olympia, Philadelphia, Portland, Raleigh, Richmond, Savannah.

For complete data, fill in and mail this coupon today

Georgia-Pacific Plywood Company
Plastic Plywood Division
Maritime and Dock Streets
Port Newark 5, N. J.
Please send me GPX Use Folder.
NAME.....
FIRM NAME.....
.....
FIRM ADDRESS.....
CITY.....STATE.....
POSITION.....

BREVITY—Identify by IEN - 4172 if you write the maker

DRUM TUMBLER AND ROLLER

Both tumbles and rolls loaded metal drums for mixing contents.

Capacities 30 to 110 gallons inclusive.

Weights to 500 pounds per drum.

Uses any 1½ or 2 H. P. motor depending on load.

Lighter units for fibre drums available.

Ask for bulletin, "Old Faithful"

THE VOL-U-METER COMPANY
Buffalo 16, New York

BREVITY—Identify by IEN - 4173 if you write the maker

For Working Sheet or Plate Steel

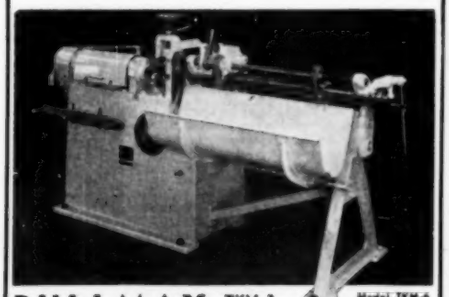
PULLMAX DOES IT ALL!

PULLMAX
Sheet and Plate Working Machines

Imagine, one machine doing all of these operations—seven models that work the finest gauges up to 11/32" (in mild steel). Also ideal for working stainless, non-ferrous metal, wire mesh. Leaves a smooth perpendicular cut with no further finishing required. Pullmax does it better . . . faster.

WRITE FOR ILLUSTRATED CATALOG

. . . or Cutting Wire



PULLMAX TKM-3 TKM-6

WIRE STRAIGHTENING MACHINE

★ FULLY AUTOMATIC! ★ ANY DESIRED LENGTH TO 19'6"!
★ TKM-6 WORKS WIRE OF 3/32" TO 9/32" DIAMETER!
★ TKM-3 WORKS WIRE OF .020" to .080"!

An automatic machine with rotating straightening dies that relieve internal stress in wire. Wire is cut by contacting adjustable stop. Built sturdy and rugged to the highest standards of precision. All high speed shafts are mounted in ball bearings. Gears are hardened chromium nickel steel—All meshing parts, rollers and guides are hardened and ground.

Machines cut any desired length to maximum of 19'6". Receiving trays available in multiples of 3'3" up to a maximum of 19'6".

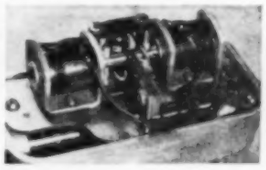
WRITE FOR LITERATURE AND PRICES

AMERICAN PULLMAX COMPANY, INC.
2631 North Western Ave. • Chicago 47, Illinois

BREVITY—Identify by IEN - 4175 if you write the maker

DRIVE . . Solenoid motor, 0.5 to 100 rpm., is reversible

Source: VIKING TOOL & MACHINE CORP.
8 Main St., Belleville 9, N. J.



Two solenoids are mounted facing each other on the opposite ends of a horizontal shaft. The solenoids are connected electrically so one or the other can be employed to vibrate the shaft or oscillate it at synchronous speed through a 1/16-in. axial movement. The shaft carries two pins to engage fingers on springs wrapped around a vertical worm shaft.

Energizing one solenoid causes the pin on its side to move the spring against restraining pressure so the worm shaft will be advanced in small increments in a given direction. Energizing the opposite solenoid causes a second pin and its engaging spring to rotate the shaft in the opposite direction. This vertical shaft drives a worm gear mounted on the horizontal output shaft located beneath the main housing.

The unit can be supplied for speeds from ½ to 100 rpm. and for operation on 6 to 220-volt, 60-cycle ac. On 30-watt input the starting torque is 80 in. lb. at one revolution per minute. Assembly is in a weatherproof die-cast housing.

BREVITY—Identify by IEN - 4176 if you write the maker

GAGE . . Adjustable micrometer reads thousandths, 12 or 24 in. range

Source: LESTER MICROMETER CO.
3208-12 Cedar Ave., Cleveland 15, Ohio

Please note our errors

The company has pointed out to us that we should have named both 12 and 24-in. ranges in our heading for its new micrometer, previously described IEN-3039-51. We also should have added that throat dimension is specification in addition to the 3-in. standard construction.

BREVITY—Identify by IEN - 4177 if you write the maker

CLEANING . . Detergent mixer and sprayer to clean cars and trucks

Source: DETREX CORP.
P. O. Box 501-A, Detroit 32, Mich.

Drex-Foamizer is a new assembly of stand-mounted drum containing a mixture of soapless detergent and water with a motor driven pump to form a cleaning foam and spray it on a motor vehicle. The foam wets and loosens dirt, grease, road grime without streaking or harming wax finishes. It is rinsed off to complete the job. The 55-gal. drum holds sufficient liquid for about fifty vehicles to be cleaned.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

BREVITY—Identify by IEN - 4178 if you write the maker

KETT TOOLS *Pay off . . .*

THE KETT POWER SAW ...A FIST-FULL OF CUTTING POWER

In the tool kit of every contractor, builder, or maintenance man . . . in every metal-working shop, the Kett Power Saw is a time and labor-saving necessity. Light-weight but rugged and powerful, the Kett tool nips with amazing ease and speed through most any kind of sheet material . . . mild steel up to 10 gauge, aluminum to 3/16", plastics and other soft material up to ¼" thick.

Immediate Delivery, Write to Dept. A-4, for full details and descriptive literature.

The KETT TOOL COMPANY
5 EAST THIRD STREET, CINCINNATI 2, OHIO

BREVITY—Identify by IEN - 4179 if you write the maker

SHOOT THE WORKS

. . . with hurricane blasts of air from a CLEMENTS-CADILLAC cleaning tool. Oust hazardous Dust, Dirt, and Grit this fast, easy way. It's a sure bet you'll reduce breakdowns and have better running, longer lasting machinery.

SAVE TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 3 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 4180 if you write the maker

Here is the pair for clean, dry air . .

JOHNSON AFTERCOOLER
Used where moisture is vaporized by the heat of compression. Circulates cooling water around the line, condenses the oil and water vapor so Separator can remove them. Simple in design, highly efficient in performance.

SIZES FOR ALL NEEDS

JOHNSON SEPARATOR
Removes more than 99% of all water, dirt and oil from compressed air or steam. Combines the two best principles of separation—first allows air to expand slightly, then changes flow direction with the "Thousand Baffles". Model illustrated is the newest idea in separator design, with self-draining trap mechanism built right in.

WRITE FOR BULLETIN

The Johnson Corporation
846 Wood Street, Three Rivers, Mich.

BREVITY—Identify by IEN - 4181 if you write the maker

FLEXLOC

SELF-LOCKING NUTS

STAY **TIGHT**

AFTER 171,360,000 VIBRATIONS AT 4000 CYCLES PER MINUTE

Plain nuts with lock washers loosened after only ONE HOUR of 4000-cycle-per-minute operation on the vibrator of a concrete block machine at the plant of the Bethayres Concrete Block Co., Bethayres, Pa.

When FLEXLOC Self-Locking Nuts were installed, they were *still tight* when the machine was torn down for rebuilding after 6 weeks operation—at 4000 C.P.M., 17 hours a day, 7 days a week!

If you have an application where nuts loosen or back off, try FLEXLOC, the one-piece, all-metal STOP-and LOCK-NUT "that won't work loose."

Send for Bulletin 619-A today.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 4182 If you write the maker

They Say their trucks are Shorter

COMPARE OTHER MAKES WITH THE MOTO-TRUC

THEN YOU'LL KNOW Moto-Trucs are the *shortest* motorized, battery operated walkie type trucks built regardless of fork length requirements. And by buying a Moto-Truc you get equipment that not only goes more places but is the *easiest* to operate because all controls are in easy grip roller type handle.

The Shortie model Moto-Pallet Truck has a capacity of 4,000 pounds, and is driven by 12-volt motors for ordinary operation, and 18-volt for heavy duty or ramps. Power cost as little as 8¢ per 8-hour day.

MOTO-PALLET TRUCK "Shortie" Model

Write for New Bulletin No. 51, and Specifications.

The MOTO-TRUC Co. 1913 E. 59th Street CLEVELAND 3, OHIO. Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

PALLET TRUCKS
PLATFORM TRUCKS
HI-LIFT TRUCKS

BREVITY—Identify by IEN - 4183 If you write the maker

THE FLORLINE MARKING MACHINE

Makes Safety & Parking Lines At Walking Speed!

Often pays for itself on the first job! 1 man alone can do the floor marking in 1 day that previously took an entire crew.

- Makes curved, straight, continuous or skip lines . . . 2, 3, or 4 inches wide with interchangeable carriages.
- Holds 1½ gals. paint, lacquer, whitewash . . . cannot spill.
- No motor, compressor or attachments.
- One man, one hand operation.
- Portable, efficient, speedy.
- Operates on gravity feed.
- Easy to clean and store.

$97.50 F.O.B. Detroit

Fully Guaranteed.

H. C. SWEET CO.
12083 Woodbine Avenue Detroit 28, Michigan

BREVITY—Identify by IEN - 4184 If you write the maker

HSM HONEYWELL SUPPLIES MAN

It will pay you to call in your Honeywell Supplies Man...today!

WISE BUYERS benefit from the provisions of the HSM Plan for all pyrometer supplies purchasing. The HSM Plan includes a realistic survey of your pyrometer supplies requirements, a listing of the specific items such as thermocouples, protective tubes, extension wire, charts, etc., a breakdown according to planned and periodic purchasing, and a contract which features a marked reduction in your total cost. Once the plan starts to operate, it's practically automatic . . . gone are the days of confused specifying and hopeful waiting for delivery.

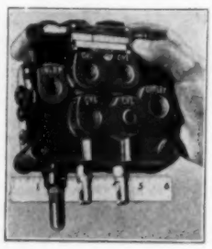
Call in *your* Honeywell Supplies Man, today . . . he is as near as your phone. Stocks maintained in Philadelphia, Cleveland, Chicago, Houston, Los Angeles and San Francisco. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

Honeywell BROWN INSTRUMENTS

BREVITY—Identify by IEN - 4185 If you write the maker

VALVE . . Hydraulic operating unit, multiple plungers and relief valve

Source: HYDRAULIC EQUIPMENT CO. 1102 E. 222nd St., Cleveland 17, Ohio



Recently improved design in the company's Series-V16 hydraulic operating valve is available with two to four plungers each in three or four-way design to individually operate single of double-acting cylinders. Each valve unit rates 5 gpm. for operating pressure of 1,400 pounds.

Standard design provides high-pressure inlet and low-pressure outlet on the left and right-hand sides respectively. The high-pressure inlet can be positioned on the top or the bottom instead of the side when specified. The differential-type adjustable relief valve is built into the housing. Pressure is adjusted by selection of a spring in a desired range. The double valve assembly shown in the illustration measures approximately 6 in. in width. The four valve assembly measures 9 in. over this particular dimension. Body height, or length in line with the plungers, is 5½ inches. Width is about 2½ inches. The plungers are the company's standard spring-return design. Pipe connections measure ½ inch.

BREVITY—Identify by IEN - 4186 If you write the maker

CYLINDER . . For counterbalance use 8 to 20 in. for 200-lb. pressure

Source: MILLER MOTOR CO. 4025-29 N. Kedzie Ave., Chicago 18, Ill.

New sizes, maximum at 20 in. in diameter, have been added to the company's line of pneumatic cylinders. The new units are suited particularly for counterbalance duty in connection with press gates and vertically-reciprocating parts of other heavy machinery. The design includes steel heads, caps and mountings, chromium-plated piston rods, piston-rod dirt wipers, honed bores, wear-compensating seals that require no field adjustment. The cylinders are made of brass. A number of mounting styles and stroke lengths can be specified.

BREVITY—Identify by IEN - 4187 If you write the maker

MAGNESIUM . . Book of technical data on magnesium alloys, properties and applications

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

Forms in which magnesium is made and corresponding properties in those forms is subject of new 76-page booklet DM-96a, "Magnesium Alloys and Products". Topics include physical and mechanical properties, production and uses of castings, die castings, extrusions, weights and tolerances.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4188 If you write the maker

CLEVELAND TAPPERS
Cut Tapping Costs by Combining Operations

Cleveland engineers can save production dollars and valuable working time by designing a CLEVELAND TAPPER which will not only combine several operations but also tap groups of holes at one stroke of the machine.

Check with Cleveland FIRST

Only CLEVELAND offers you all these features.

- Precision hardened and ground lead screw.
- Fully automatic or manual control.
- Precision depth control for blind hole tapping.
- Heat treated alloy steel spindles for maximum strength.
- Easily changed spindle speeds.
- Exclusive super sensitive clutch reduces breakage and increases tap life.
- Positive coolant and lubricant supply under constant control of operator.
- Rigidly constructed to give years of service.
- Maximum safety for operator and machine.

A CLEVELAND TAPPER set up on a munitions job, tapping a 1 15/32", 16-pitch Buttress thread in SAE 4143 steel tubing hardened to 35 to 37 Rockwell.

WRITE FOR PRODUCTION TAPPING GUIDE Y-3

THE CLEVELAND TAPPING MACHINE CO.
A Subsidiary of AUTOMATIC STEEL PRODUCTS, INC., CANTON 6, OHIO

BREVITY—Identify by IEN - 4189 If you write the maker

SPROCKETS are easy to order

. . . RIGHT OUT OF THE CATALOG

When the job calls for stock roller chain sprockets—Sewall is as near as your telephone or mailbox. Precision-made Sewall sprockets add life to your chain drives—and they're available in a wide range of sizes. Do you have our complete catalog?

Let us quote on made-to-order sprockets, too.

By the Makers of Sewall Gears

NEstor 1381

E. B. SEWALL MANUFACTURING CO.
686 Glendale St. • St. Paul 4, Minnesota

BREVITY—Identify by IEN - 4190 If you write the maker

3,000 lb. capacity electric-powered, tilting, telescoping lift truck with rotating roll paper clamp, built by Elwell-Parker Electric Co. A total of eight Type 16D-1200-2 National Acme Snap-Lock Limit Switches are used to control its positioning motions.

For Pin-Point Positioning of Paper Rolls

ELWELL-PARKER PICKS

SNAP-LOCK TRADE MARK

This new Elwell-Parker tilting, telescoping, fork-lift truck with rotating roll paper clamp can pick up a 3,000 lb. roll from either a horizontal or vertical position and reposition it either way, *exactly*, without using pallets, skids or dunnage strips.

To insure safe, positive *dependable* operation, eight National Acme Snap-Lock Limit Switches are used in controlling the critical movements of the positioning mechanisms on this remarkable lift truck. They stop each motion at the *exact* point required for satisfactory operation.

Precision, positive action and dependability under heavy duty are attributes of all National Acme Snap-Lock Limit Switches—and they are built in a variety of types and sizes to suit every industrial application. Each embodies the famous exclusive Namco features: SNAP make and break, pure silver self-wiping contacts, positive on or off locking (can't stop on dead center), separate sealed electrical and mechanical sides, hardened steel moving parts. No other limit switch can offer you equal safety and dependability under extreme service conditions.

The complete range of standard Snap-Lock Limit Switches is illustrated and tabulated in Bulletin EM-50. Ask for your copy.

ELECTRICAL MANUFACTURING DIVISION
178 East 131st Street • Cleveland 8, Ohio

NATIONAL ACME
CLEVELAND, OHIO

BREVITY—Identify by IEN - 4192 If you write the maker

WRITE FOR YOUR COPY TODAY!

New folder describes complete line of GARLOCK Packings and Gaskets made of Teflon*

Here, in a handy 8-page folder, are all the new Garlock products made of Teflon—the only wholly satisfactory material for sealing against acids, organic solvents, and other chemicals. Our new folder contains illustrations and descriptions of various types of "Teflon" rod packings and gaskets. Send for your copy today.

*Teflon is the Du Pont Company's trademark for tetrafluoroethylene resin

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.

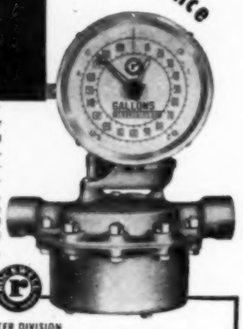
GARLOCK

BREVITY—Identify by IEN - 4193 If you write the maker

DO YOU WANT TO MEASURE?

For Accuracy and Convenience

USE EMPIRE *Industrial* METERS



You'll save time and money blending, batching, processing liquids with Empire meters. You'll get exact quantity control, quick! You'll cut evaporation loss, reduce fire hazards, prevent contamination. Pipe sizes, ½ in.-3 in. a variety of registers. Automatic shut-off available on some models. Write for bulletin.

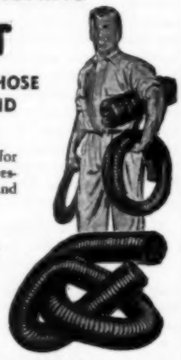
Dept. U
PITTSBURGH EQUITABLE METER DIVISION
ROCKWELL MANUFACTURING COMPANY
Pittsburgh 8, Pa.

BREVITY—Identify by IEN - 4194 If you write the maker

FOR VENTILATION, FUME & DUST CONTROL AIR CONDITIONING

FLEXAUST

SPIRAL-REINFORCED HOSE
LIGHT, STRONG AND VERY FLEXIBLE



Flexaust is of proven suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control, air conditioning.

EXTREMELY EASY TO INSTALL—EFFICIENT AND ECONOMICAL IN USE

SIZES: 1¼" to 28" dia.
Various Flexaust types, accessories, and other hose types also available:

BLOFLEX
Non-reinforced collapsible hose

PORTOVENT
Ring-reinforced retractable hose

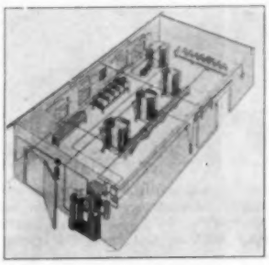
Write for full descriptive data and prices

AMERICAN VENTILATING HOSE CO.
Dept. IE-2, 15 Park Row, New York 38, N. Y.
Plant: Amesbury, Mass.

BREVITY—Identify by IEN - 4195 If you write the maker

EXTINGUISHING . . Piped equipment delivers dry chemical to protect area

Source: ANSUL CHEMICAL CO.
Foot of Stanton St., Marinette, Wis.



Pressure container filled with the company's dry extinguishing chemical, a connected tank of nitrogen under pressure, a diaphragm-operated pressure release, piping to an area to be protected, delivery nozzles and actuating devices operating on air pressure due to temperature rise make up this new piped extinguishing equipment. Available in addition are actuating controls, operating devices and associated equipment to sound warning signals, close doors, dump liquid from tanks for removal from a burning area.

When a fire starts in a protected area, like the schematic one shown in the illustration, air is caused to expand in the nearest heat-actuated device and flows through a small copper tube connecting to the diaphragm-operated release unit installed at the nitrogen cylinder. Movement of the diaphragm operates a trip which allows a weight to drop and open the nitrogen valve. The gas pressurizes the dry chemical for flow through the discharge pipes and delivery through the nozzles. These nozzles stand open normally but can be capped in areas such as those over paint. The caps blow off and can be replaced. The gas pressure also actuates the releases on closing and signaling devices, dump valves and also selector valves when the installation is set up for selective action over several areas.

Bulletin, 4 pages, "Dry Chemical Piped Systems," illustrates schematic installation, describes and illustrates the equipment, names typical applications.

BREVITY—Identify by IEN - 4196 If you write the maker

PHOTOGRAPHING . . Camera records action on 35 mm. movie film

Source: FAIRCHILD CAMERA & INSTRUMENT CORP.
51-55 W. Union St., Pasadena 1, Calif.

Magazines holding 400 or 1000 ft. of standard 35 mm. motion picture film are interchangeable on this new data recording camera. Lenses are positioned in a focus calibrated mount. A dovetailed mounting slide insures exact camera indexing during removal and replacement. Operation can be maintained in a temperature range between minus 60 to plus 160 deg. F. Operating speeds can be selected between 4 and 16 frames per second with constant exposure rate maintained over the range. Single frames can be exposed manually or by automatic control. A counting circuit assists in frame identification. Power input is at 28 or 110 volts as specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4197 If you write the maker

MET-L-WOOD
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES
Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

BREVITY—Identify by IEN - 4198 If you write the maker

HANNIFIN

75 STANDARD MODELS

Hydraulic Presses

Engineered To Meet Your Requirements

IT'S EASY to get hydraulic presses engineered to meet your particular requirements when you choose from the Hannifin line. 75 standard models, plus many special designs, in capacities ranging from 5 to as high as 500 tons are available for handling standard and special production jobs: straightening—press fit assembly—forming—molding—broaching and similar operations. Hannifin design readily permits modifications or variations from standard at moderate cost. Table size, gap, reach, control equipment, and ram speed can be altered easily to suit special conditions. Take advantage of Hannifin engineering service—ask for recommendations.

Right—Model F-250 forcing press. Capacity 25 tons.

SEND FOR THIS CATALOG

BULLETIN 130, "Hannifin Standardized Hydraulic Presses," contains detailed information on Series F Forcing Presses, Series S Straightening Presses, and Series C Column Type Presses — Helpful specification and engineering data. ASK FOR YOUR COPY.

HANNIFIN CORPORATION 1107 S. Kilbourn Ave., Chicago 24

BREVITY—Identify by IEN - 4199 If you write the maker

TO CUT CUTTING COSTS

Starrett makes it easy for you to select the one best, most economical blade or band for any cutting operation. The complete line includes all types of *hacksaws* for hand or power cutting . . . *band saws* for cutting metal, wood, plastics, contour cutting, friction sawing, etc. . . . and *band knives* for cutting any soft or fibrous material.

Always Dependable Since 1880

Buy THE BEST Starrett

Hacksaws, Band Saws, Band Knives

TO HELP YOU CUT CUTTING COSTS

Starrett Hacksaw and Band Saw Catalog is a practical, up-to-the-minute guide to better, faster, lower cost cutting. Write for it today. Address Dept. "N".

Starrett
Standard of Precision
BUY THROUGH YOUR DISTRIBUTOR
THE L. S. STARRETT CO. ATHOL, MASSACHUSETTS U.S.A.

BREVITY—Identify by IEN - 4200 If you write the maker

Why UNBRAKO "STANDARDS" IN SOCKET SCREWS

"STANDARDS" Keep you in the BLACK

because:

Standard design and purchase | Standard tools | Standard (fast) production with "standards" from stock | Standard (or higher) profits

"SPECIALS" put you in the RED

because:

Special design | Special drawings | Special purchase | Special (delayed) delivery | Special stock

Special tools | Special production | Special bookkeeping | Special costs (higher) | Special profits (lower)

STANDARD recommends "Standards"

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 4201 If you write the maker

You don't pay for an... Abart SPEED REDUCER

IT PAYS YOU TO USE IT!

Good engineering — good design—highest quality materials . . make Abart Speed Reducers a paying investment. It's an investment that pays off in quiet, trouble-free operation, power-saving economies, and extra-long, dependable service. We make more than 75 types of Reducers in spur, worm, or combination—1/50 to 417 HP—ratios up to 10,000 to 1. Send *today* for our informative book on Abart Reducers, containing engineering data and drawings, and a complete list of Reducers available. It will help you solve *your* speed reducer problems!

Abart GEAR & MACHINE CO.

4823 W. 16th Street Chicago 50, Ill.

BREVITY—Identify by IEN - 4202 If you write the maker

Convince Yourself WITH THIS TEST!

See How VOLAX Removes Printing Ink COMPLETELY without Irritating Skin!

1. Ask a pressman to dip his hands in printing ink—*it's stubborn . . . hard to remove.*

2. Have him use VOLAX Hand Cleaner—ink's off in a jiffy—*and safely too!*

Your DOLGE Service Man will be glad to demonstrate

VOLAX is designed for heavy-duty skin cleansing. It contains mild soaps; water softener and friable volcanic ash . . . removes ground-in printer's ink with a gentle, non-irritating action. VOLAX is the *specific* cleaner for tough, ground-in dirt and ink discoloration.

VOLAX

Dependable **DOLGE**

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 4203 If you write the maker

It's FREE! Get your name on the mailing list now!

You'll want to receive Industrial Control News every month. This new publication contains articles and helps on how to make your control operations more efficient . . . with the help of the complete line of Honeywell Automatic Controls.

Practical field men tell how control devices of all types can be used and adapted to new and unusual applications . . . how they are being used in plants similar to yours.

You will want to save *every* copy for reference. Write today and ask to be placed on the mailing list . . . ask, too, for Catalog 8304.

Minneapolis-Honeywell Regulator Co., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

Honeywell BROWN INSTRUMENTS

BREVITY—Identify by IEN - 4204 If you write the maker

GRINDING . . Opposed disc machine is tooled to end grind coil springs

Source: CHARLES H. BESLY & CO.
51 Clinton St., Beloit, Wis.

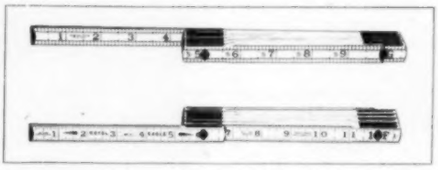
New tooling has been developed for the company's opposed-spindle vertical disk-grinding machine to handle coil springs measuring ¼ to 4 in. in diameter by ½ to 6 in. in length, employing wire measuring .0625 to .500 inch. The springs are carried between two 30-in. abrasive discs as the table is rotated at variable speed between 1/6 and 19 rpm. The upper disc is fed down until final grind length is reached. Then it is retracted and a gate is opened to discharge the springs by gravity from their positioning tubes.

The tubes are held in triangular groups by clamps in the rotating discs to take springs dropped into them by the operator at the front of the machine. When required size is reached a limit switch stops the downward feed and a signal light indicates that the grinding cycle is completed.

BREVITY—Identify by IEN - 4205 If you write the maker

GAGE . . Wood folding rule is marked in fractions and decimals

Source: EAGLE RULE MFG. CORP.
508-12 Hunts Point Ave., New York 59, N. Y.



Model 410 and Model 610 are two new units in the company's line of wood folding rules listing respectively at $1.50 and $1.75. The first has single-edge graduations marked in tenths and hundredths of a foot on the outside and in sixteenths of an inch on the inside. The other is marked in opposite manner with sixteenths of an inch on the outside and tenths and hundredths of a foot on the inside.

BREVITY—Identify by IEN - 4206 If you write the maker

MANUFACTURING . . Booklet traces steps in automatic production of auto frames, pipe

A. O. Smith Corp.
3531-35 N. 27th St., Milwaukee 1, Wis.

"A Better Way" titles 24-page picture book on the company's development and activities. Included are its automobile frame plant to make 10,000 frames in 24 hours, its pipe plant to make 15 miles per day, pressure vessels, water storage tanks, meters, pumps, motors, other products.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4207 If you write the maker

PURE WATER DISTILLED WATER?

PROBLEMS SOLVED WITH Barnstead EQUIPMENT

DEMINERALIZED WATER?

In hundreds of manufacturing processes, where complete purity is needed, Barnstead Stills provide the highest-quality, lowest-cost, chemically pure, sterile water from ½ to 1000 gallons per hour. With over 100 different models to choose from, Barnstead can provide the exact still to fit your particular needs. For Barnstead Laboratory and Industrial stills are the proven standard of the scientific and industrial world.

Where modern manufacturing processes require only high-test mineral-free water, Barnstead Demineralizers are the best producers . . . 5c per 1000 gallons with a minimum of supervision and maintenance. Many new industries are turning to Barnstead Demineralized Water for greater production, fewer rejects and better quality control.

WRITE

Catalog #123 gives both sides of the Pure Water Picture. Since Barnstead makes both stills and demineralizers, you'll find this catalog complete, authoritative, unbiased. Write Today!

Barnstead STILL & STERILIZER CO.

First in Pure Water since 1878

50 Lanesville Terrace, Forest Hills, Boston 31, Mass.

BREVITY—Identify by IEN - 4208 If you write the maker

Let The ARIDIFIER CLEAN YOUR AIR AND GAS LINES

Removes 92% Oil, Water and Dirt

The Aridifier gives you positive removal of oil, moisture and other foreign matter from air or gas lines. With paints and lacquers it often eliminates bloom and imperfections in finish. It provides dry lines for ceramics, sand blasting, for air cleaning, etc. Wherever the need exists for *dry* clean air or gas, the Aridifier delivers the goods. Easily installed. No maintenance problem. 10 models available. Capacity range: As low as 7 CFM to 17,000 CFM.

BULLETIN 147 Tells The Complete Story

HOW IT WORKS Exploded view shows how four multi blade rotors revolve at high speed in opposite directions under impact of air movement through non-aligned rotor spaces. Moisture, dirt and other foreign matter which collect on rotor blades are thrown out of air stream by centrifugal force to side of housing, and pass into drain.

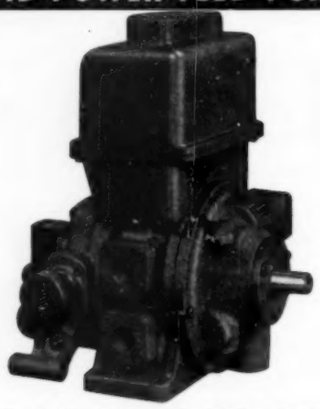
Made By The Manufacturers of Logan Lathes and Shapers.

Logan ENGINEERING CO.

4902 LAWRENCE AVE., CHICAGO 38, ILL.

BREVITY—Identify by IEN - 4209 If you write the maker

THE NEW OILGEAR "JK" FLUID POWER FEED PUMPS



ARE SO EASY TO APPLY

To New or Old Machines

Simply connect a new, small Oilgear "JK" Feed Pump to an Oilgear cylinder and an Oilgear engineered control and you have a complete pushbutton and switch-controlled fluid power system. No hydraulic or electric application engineering is required. Merely follow standard recommendations in mounting units, connect pump to cylinder with two pipes and wire two solenoids on pump to electric controls. Oilgear supplies the feed pump, cylinder, control cams, limit switch panel, control panel and pushbutton station. Oilgear provides patented, tried and proven hydraulic and electric circuits.

You can improve your new and old machines without further congesting your engineering department or employing hard to get qualified hydraulic engineers. You cut production and assembly costs because NO mechanical control linkages . . . NO auxiliary valves, pipes or fittings are required. You do not have to risk delay, disappointment or malfunctioning. You avoid divided responsibility. You receive the full values inherent only in 100% Oilgear systems.

No other single change in a machine can contribute so much to simplified design, reduced costs or improved performance as the installation of the "JK" feed system.

Bulletin 44200 describes this small, compact packaged unit that incorporates feed pump, rapid traverse gear pump, control and relief valves as an integral unit; other features described are: wide range of feeds . . . consistently maintained pre-set feed rates, ease of servicing without disconnecting pipes or draining oil reservoirs, etc. Send for this bulletin today. THE OILGEAR COMPANY, 1567 W. Pierce Street, Milwaukee 4, Wisconsin

Oilgear Fluid Power

PUMPS, MOTORS, TRANSMISSIONS, CYLINDERS AND VALVES

BREVITY—Identify by IEN-4211 if you write the maker

STOP TAKE-UPS and DOWN-TIME with...

LEATHER for Greater Pulley Grip and Durability!

RAYON CORDS eliminate stretch and maintenance.

CORDAN LEATHER BELTS deliver More Power, More Production Longer!

CORDAN LEATHER BELTS hold tension, reduce slippage, practically eliminate take-ups and down-time.

Write TODAY for descriptive, illustrated literature.

ESTABLISHED 1881 **S. R. SIKES COMPANY** MINNEAPOLIS 15, MINNESOTA

BREVITY—Identify by IEN-4212 if you write the maker

Better Coating at Lower Cost with

POTDEVIN

Coating Machines

Manufacturers in every field have been depending on their "POTDEVINS" to cut down operating costs.

Illustrated is Model 2 R for applying any type coating to any kind of material.

There is a POTDEVIN coating machine for every job . . . from a 6-inch hand-operated model for small work to a giant 46-inch semi-automatic for mass production. Such coating materials as hot or cold glues, latex, resins, paint, varnish and lacquer, as well as many of the new type coating materials, work with equal ease . . . and the amount of coating is accurately controlled. Write POTDEVIN today for full particulars and discover how easy your coating problem can be solved with a "POTDEVIN" machine. And you don't need skilled help to operate a POTDEVIN.

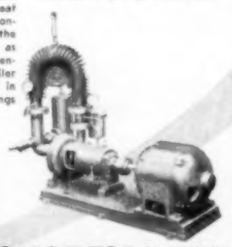
POTDEVIN MACHINE CO.
1213 38th St., Brooklyn 18, N. Y.

Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling. POTDEVIN

BREVITY—Identify by IEN-4213 if you write the maker

SAVINGS IN PROCESS STEAM

In 66 industries Cochrane C-B System of Condensate Drainage Control has helped produce quality goods at lower cost through better steam usage. By providing optimum heat at process equipment, returning condensate to boiler at practically the same temperature and pressure as when it left, and by draining condensate free of entrained air to boiler without heat loss, it has resulted in better products at substantial savings in fuel, time and labor. Write for Publication 3250 and you will get some profitable ideas on how to get more out of your process steam.



COCHRANE C-B SYSTEM OF CONDENSATE DRAINAGE CONTROL

COCHRANE CORPORATION
3152 N. 17th Street, Philadelphia 32, Pa.
In Canada: Canadian General Electric Co., Ltd., Toronto
Please send me a copy of your Publication No. 3250 on Cochrane C-B System of Condensate Drainage Control

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

BREVITY—Identify by IEN-4214 if you write the maker

DRILLING . . Automatic machine for cotter pin holes in pins and screws

Source: GOVRO-NELSON CO.
1933 Antoinette, Detroit 8, Mich.

New assembly of four of the company's Model-KH centrifugal-feed motor-driven drilling heads, previously described IEN-2055-50, are combined with a Geneva indexing dial mounting eight stations and with a hopper to feed work parts in step with the drilling and countersinking operations. The machine will drill and countersink on both sides at the rate of 1,500 pieces per hour.

Work pieces are countersunk at the first operating station on one side by one of the drilling heads. At the next two stations two of the heads start and complete the drilling. The part is countersunk on the opposite side at the next station by the fourth unit. Movements are interlocked so the machine will stop if a tool is broken or if a work piece does not fall into position correctly. The machine will slow down if a tool becomes extremely dull.

BREVITY—Identify by IEN-4215 if you write the maker

EXTINGUISHING . . Gun and container delivers foam on small liquid fires

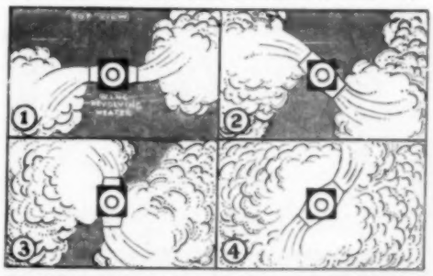
Source: NATIONAL FOAM SYSTEM INC.
Adams & Union Sts., West Chester, Pa.

A water line measuring ¾ or 1 in. connects to this new Aer-O-Foamster extinguisher at 1, as it is shown in the illustration. The gun and its container are carried by an operator at the handle 2. The gun locks to the container so an empty one can be replaced with a filled one quickly by release or connection at the lock 3. A trigger in the handle is depressed to deliver foam and is released to deliver clear water as supplied through the hose line connected to the unit.

The unit weighs 26 lbs. filled with foam liquid. It will deliver 540 gal. of foam on a charge. It has a range to 50 ft. and will continue in action for about 6 minutes. The assembly can be furnished for storage in freezing locations, ready for instant use. Annual recharging is not required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-4216 if you write the maker



1. Heater starts. 2. 15 seconds later, 45° revolution. 3. 30 seconds later, 90°. 4. 45 seconds later, 135° revolution.

Revolving Discharge Outlets for Thorough Heat Coverage

Wing Revolving Unit Heaters keep the heated air moving, circulating around obstacles, seeking out far corners, spreading an even, uniform, healthfully invigorating blanket of warm air over the entire working area. **Write for Bulletin HR4.**

L. J. Wing Mfg. Co.
160 Vreeland Mills Road, Linden, N. J.

Wing REVOLVING UNIT HEATERS

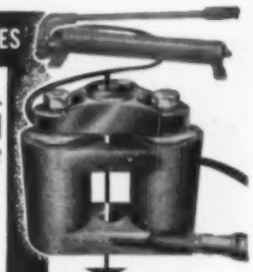
BREVITY—Identify by IEN-4217 if you write the maker

OTC ANNOUNCES

SENSATIONAL **POWER-TWIN** HYDRAULIC PULLER WITH CENTER HOLE

REVOLUTIONARY ADDITION TO THE FAMOUS OTC PULLING SYSTEM

- Fits all OTC pulling units
- Works in any position
- Pushes—Pulls
- Faster than screw operation
- Eliminates torque
- More powerful—No friction
- Easier—just pump strokes
- Safer—remote control



CENTER HOLE permits Power-Twin to do jobs no other hydraulic ram can do . . . makes possible application of direct force . . . fast, easy, unlimited adjustment . . . versatile interchange of parts.

LIGHT — COMPACT — POWERFUL — SAFE

The fastest, easiest working, handiest Push-Puller in history . . . sensational in performance, its time and labor saving ability and low cost make it a must for any shop. See your jobber for complete information or write us.

Spline shaft bearing comes off quickly with Power-Twin and OTC Push-Puller and 932 attachment.

No problem to remove drive gear with OTC Power-Twin and 1007L Grip-O-Matic.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

BREVITY—Identify by IEN-4218 if you write the maker

Kester Solder

Kester engineers, with over 100,000 different types and sizes of solder available, will specify the right flux-core solder for the job.

Easier to Use

Using the most suitable solder for each operation will enable solderers to work at top speed without sacrificing quality. No rejects.

Top Quality

Only the finest grades of tin and lead commercially available used. Fluxes—chemically correct.

KESTER SOLDER COMPANY
4201 Wrightwood Ave., Chicago 39
Newark, N. J. • Brantford, Canada

KESTER SOLDER

SEND FOR FREE MANUAL, "SOLDER and Soldering Technique"

BREVITY—Identify by IEN-4219 if you write the maker

Production Picks Up when Synthane is the Specified Material

Synthane plastic laminates are easily worked on standard machinery. Turned, drilled, punched, sawed or milled parts may be inexpensively produced from Synthane. Synthane is light in weight, yet finished parts made from it have the hardness, toughness, density, corrosion, abrasion and impact fatigue resistance to give peak performance and long life. Automatic screw machines and Synthane rods and tubes are an excellent combination for low cost, high speed production of smaller parts.

For information about Synthane and some suggestions about what it can do for you, clip and mail the coupon today.

TECHNICAL PLASTICS
SHEETS • RODS • TUBES
FABRICATED PARTS
SYNTHANE
MOLDED-LAMINATED
MOLDED-MACERATED

SYNTHANE CORPORATION
South River Road, Oaks, Pa.
Please send me a copy of the complete Synthane catalog.
Name _____
Firm _____
Address _____
City _____ State _____

BREVITY—Identify by IEN - 4220 if you write the maker

STURTEVANT DUSTLESS BLENDERS

Thoroughly Blend Substances into an Inseparable Mass

The 4-Way Mixing Action of the Sturtevant Dustless Blenders thoroughly mixes two or more substances into an inseparable whole . . . every part of which is the same analysis. Single receiving and discharging opening insures tight sealing during mixing process. "Open-door" accessibility permits thorough cleaning. The fast, accurate mixing operation increases output . . . cuts mixing costs. Mixing capacities from ¼ ton to 75 tons per hour. Write.

STURTEVANT MILL COMPANY
113-A CLAYTON STREET • BOSTON 22, MASS.

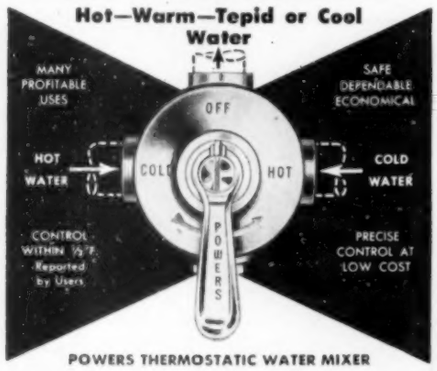
BREVITY—Identify by IEN - 4221 if you write the maker

Cuts Floor-Cleaning Time 2/3!

Here is a *Finnell Scrubber-Vac, No. 418P*, specially designed for buildings with 2,000 to 15,000 sq. ft. of floor space. Cleans floors in *about one-third the time* required with a conventional 15 or 18-inch polisher-scrubber using separate equipment for pickup. Speeds cleaning by handling *four operations in one*—applies the cleanser, scrubs, rinses if required, and picks up (damp-dries the floor). Also can be used for the dry work (polishing, et cetera). Has 18-inch brush ring . . . is self-propelled. Can be leased or purchased. For free demonstration on your own floors, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2604 East St., Elkhart, Ind.

FINNELL SYSTEM, INC. *Pioneers and Specialists in* FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES — BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 4222 if you write the maker



POWERS THERMOSTATIC WATER MIXER

Can It Solve a Problem for You?

Set a Powers Mixer for any temperature desired and forget it. Temperature remains constant regardless of fluctuations of *pressure* or *temperature* in water supply lines. Failure of cold water supply instantly shuts off delivery.

Is widely used for X-Ray and color film developing, hydrotherapeutic baths, chocolate enrobers and other processes requiring exact control. It is the safest regulator made for shower baths.

CAPACITY—10 gals. per min. at 45 psi. Dial diam. 5 ½". Pipe connections ½". Temp. Ranges: 65° to 115°F.; 60° to 125°F.; 75° to 175°F. *Write for Bulletin 358-H.*

LARGER CAPACITIES up to 1000 gpm. available in other types of controls. *Write for Cat. 5035.* 106

THE POWERS REGULATOR COMPANY
2737 Greenview Avenue, Chicago 14, Illinois
Established 1891 • Offices Over 50 Cities • See Your Phone Book

---

BREVITY—Identify by IEN - 4223 if you write the maker

BENDING . . Motor driven press rates mild steel to ½ in. by 20 ft.

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Wickliffe, Ohio

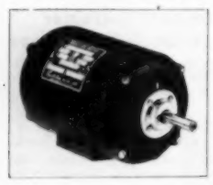
Model RS6 ½-14 is a new press in the company's Steelweld line, the largest the company has built in this line to date. It will bend mild steel plate to ½ in. in thickness by 20 ft. in length. It will take 14-ft. plates between its housings. It has a 6½-in. stroke and 18-in. throat. Overall dimensions are 20 by 11 by 18½ feet. The bed extends a little less than 4 ft. below the floor line of the assembled press.

Control centers at a solenoid air valve controlled by a foot switch on the floor. The switch is on the end of an extension cord so it can be placed as required. Operating speeds of 7 or 21 strokes per minute are selected at a gear shift.

BREVITY—Identify by IEN - 4224 if you write the maker

MOTOR . . Synchronous design for instrument drive, 1/70 to 1/25 hp.

Source: CYCLOHM MOTOR CORP.
1249-53 Mound Ave., Racine, Wis.



Two-pole design for operation at 3600 rpm. and four-pole assembly for 1800 rpm. are available in a new hysteresis synchronous design in the company's Series-2900 fractional-horsepower motors. The four-pole assembly is in three ratings between 1/70 and 1/35 horsepower. The two-pole unit is also in three ratings between 1/50 and 1/25 horsepower. All have lamination diameter of 2.9 in. and the three ratings have stacking lengths of 1.4, 1.8 and 2.2 inches.

Ball bearings in sealed assembly or porous-bronze sleeve bearings with oil reservoirs can be specified. Twelve gear units, available also cover a range of output speeds other than the motor speeds. Standard operation is on 110-volt, 60-cycle ac. Special voltages and frequencies are available.

BREVITY—Identify by IEN - 4225 if you write the maker

PAINTING . . Booklet contrasts hand finishing with spray finishing of products by Duco lacquer

E. I. du Pont de Nemours & Co.
2518 Nemours Bldg., Wilmington 98, Del.

What happened when a 1950 automobile was finished by hand using production methods and materials of 1920 is described by pictures and text in new 20-page booklet, "The Story of Duco Finishes." It took 26 days. Appearance after a year of service is something to see.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4226 if you write the maker

industrial OIL AND GAS BURNING EQUIPMENT

- Mechanical Atomizing Oil Burners
- Steam Atomizing Oil Burners
- Refractory Burner and Muffle Blocks
- Industrial Gas Burners
- Low Air Pressure Oil Burners
- Fuel Oil Pump Sets
- Valves, Strainers, Furnace Windows
- Tandem Block Combustion Units
- Combination Gas and Oil Burners

Detailed information gladly sent you upon request.

NATIONAL AIROIL BURNER COMPANY INC.
1281 EAST SEDGLEY AVENUE, PHILADELPHIA 34, PA.
Southwestern Division: 2512 SOUTH BOULEVARD, HOUSTON 6, TEXAS

BREVITY—Identify by IEN - 4227 if you write the maker

NEW FEATURES—*NEW* ADVANTAGES BALDWIN TYPE "L" INDICATOR

Designed for use with SR-4® gages: gage factors of 1.77 to 2.20. Battery-operated; converter available. Ask for Bulletin 312.

- **INCREASED CONVENIENCE.** Each step increased to 20,000 microinches/in.
- **GREATER BALANCING RANGE.** Range Extender doubled to 20,000 microinches.
- **ADDED ADAPTABILITY.** Binding post connections for external bridge.
- **INCREASED VERSATILITY.** Oscillator jack for special problems.

BALDWIN-LIMA-HAMILTON CORPORATION
PHILADELPHIA 42, PA.

Offices: Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, Washington.

BALDWIN-LIMA-HAMILTON

BREVITY—Identify by IEN - 4228 if you write the maker

LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 @ $1 per M cubic feet

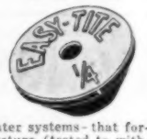
If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal	**(7,900 lbs.)**
$38.00 if oil	**(633 gals.)**
$50.63 if gas	**(67,500 cu. ft.)**

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "EASY-TITES" that outwear ordinary faucet washers 6-to-1; thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. **"EASY-TITE"**

Faucet washers



...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber – to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems – that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape . . . causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS – thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-41
2503-05 Third Avenue, New York 51.

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

BREVITY—Identify by IEN - 4230 if you write the maker

Portable SELENIUM RECTIFIER POWER SUPPLY

for

INDUSTRIAL, GOVERNMENT, ELECTRONIC & RESEARCH LABORATORIES

Invaluable for

PRODUCTION LINE TESTING

SELENIUM RECTIFIER

FULL WAVE • SIX PHASE

PORTABLE • WITH HANDLES

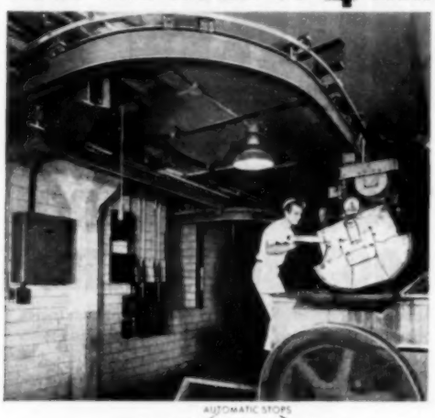
D. C. OUTPUT: 24 to 32 volts, 30 amperes. Continuously variable from 24 to 32 volts by means of rheostat control saturable reactor.
A. C. INPUT: 220 volts, 3 phase, 60 cycles.
REGULATION: Plus or minus 4% from 0 to full load current.
AMBIENT TEMPERATURE: Designed to operate at 40° C.
CONVECTION COOLED: Speed of response: 0.4 second.
SIZE: 18" x 14" x 18". Aluminum cabinet. Wgt. 150 lbs.
NET PRICES: FOB College Pt. MODEL A (D. C. Ripple 1½%) $485.
MODEL B (D. C. Ripple 3%) $450.

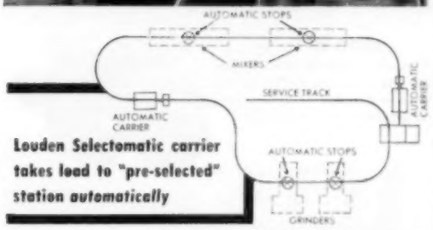
Furnished complete with voltmeter, ammeter, 6 ft. 3 phase cord and locking plug. D.C. circuit breaker, A.C. fuses, on/off switch, pilot light. Also available in KIT FORM (Model C) for Schools.

RICHARDSON-ALLEN CORPORATION
RECTIFIER SPECIALISTS
116-15 15TH AVE., COLLEGE POINT, L. I., N. Y.

BREVITY—Identify by IEN - 4231 if you write the maker

AUTOMATIC DISPATCH SYSTEM DOES THE WORK OF 4 MEN





Louden Selectomatic carrier takes load to "pre-selected" station automatically

Four workers were freed for duty elsewhere in a large meat processing plant when a Louden Selectomatic Monorail System was installed to convey ground meat to either one of two "pre-selected" mixers.

Setting the selector switch on the chosen destination, the grinder operator has only to push one button to raise and send the carrier to the desired mixing station. The carrier is returned to the grinder when the mixer operator pushes a button.

Two carriers on the system are prevented from colliding by a simple electrical "block" system. Any number of carriers or stations may be employed in a Selectomatic system.

WRITE FOR FREE BOOK

Case histories of successful adaptations of Monorail systems to an infinite variety of material handling problems are described in "Economical Material Handling; sent free on request.

THE LOUDEN MACHINERY COMPANY
204 S. Superior Ave., Fairfield, Iowa

Louden

OVERHEAD MATERIAL HANDLING

BREVITY—Identify by IEN - 4233 if you write the maker

PUMP . . Hand operated rotary to dispense inflammable liquid safely

Source: PROTECTOSEAL CO.
1918-22 S. Western Ave., Chicago 8, Ill.

List price is $33.50 for this new self-priming Underwriter's approved No. 4500 pump. It is fitted with a telescopic suction tube for insertion into the end or the sides of a drum. Delivery rate is 5 gpm. at 105 rpm.

Flame arrestors are installed at all vital points to eliminate any chance for explosion. A pressure-relief opening prevents the drum from bursting under fire conditions. The aluminum pump housing adds structural strength and makes an overall weight of 9½ lb. for the pump assembly. Lugs are provided to padlock the pump.

BREVITY—Identify by IEN - 4234 if you write the maker

MIXING . . Sand mulling machine, miniature design takes 7 lb. of sand

Source: BUCKEYE PRODUCTS CO.
2018-22 Vine St., Cincinnati 16, Ohio

For pigments flour, chemicals

New machine was initially developed by the company for use in its own laboratory to make small mixes of core binders. It is now available for general mixing applications on dry and semi-dry materials in batch-load equivalents of 1 to 7 lb. of sand. The unit mounts on a bench, is driven by a 1/12-hp. motor for operation on 110-volt 60-cycle ac. The motor is geared to the central muller-wheel head to rotate it at 40 rpm.

The head carries two hardened-steel muller wheels and two scrapers in the cast Almag cup-shaped mulling chamber which includes a hardened steel bottom. A trap door provides for discharge while the muller is operating. Shafts are mounted on prelubricated sealed bearings.

BREVITY—Identify by IEN - 4235 if you write the maker

SWITCH . . Temperature actuated, snap acting, to protect water heater

Source: CAM-STAT INCORPORATED
2308-12 S. La Cienega Blvd., Los Angeles 34, Calif.

Model CD302B is a new cut-out switch for installation with a thermostat control for an electrically-operated water heater to open the heating circuit in the event of thermostat failure. The switch opens with a snap action when temperature reaches a predetermined point between 160 and 200 deg. F. The contacts rate 6,000 watts of resistance load at 220-volt ac. The switch is double-pole single-throw design. It is reset at a pushbutton on the housing.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4236 if you write the maker

power modernization

lowers production costs . . .

with control of speed

STERLING
SPEED-TROL

. . . Gives You Variable Speed Control Necessary For:

- **PROCESS CONTROL OF:** Temperature—viscosity—level—pressure—flow—etc.
- **TIME CONTROL OF:** Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.
- **EQUIPMENT ADAPTATION TO:** Load variation—sequence synchronization. Size—tension—hardness or shape of materials to be processed—machined—conveyed—blended—mixed—etc.
- **VARIATIONS IN:** Quality—quantity—operators' abilities—etc.

Ask for your copy of pictorial bulletin No. C-62 showing Sterling Electric Power Drives Turning The Wheels of Industry.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

BREVITY—Identify by IEN - 4237 if you write the maker

SPRING STEEL

Roebling Cold Rolled brings fewer machine stoppages . . . fewer rejects

YOU SAVE MONEY with Roebling Cold Rolled Spring Steel. Its physical and dimensional uniformity cuts costs; gives a better product, better production. And Roebling Cold Rolled is made as you want it—annealed, hard rolled untempered; scaleless tempered; tempered and polished, strawed or blued.

Large quantities of Roebling specialty wires—flat, round and shaped—are now required in the rearmament program. We will always, however, do everything possible to meet your requirements. John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

BREVITY—Identify by IEN - 4238 if you write the maker

Why waste skilled Draftsmen?

OZALID SAVES VALUABLE DRAFTING TIME!

Ozalid is a *speedy copying process* that reproduces anything drawn, typed or written*—in seconds. Cuts skilled manpower hours and costs because changes on drawings, specifications, reports are instantly made with an Ozalid *intermediate* . . . because Ozalid copies *any size*—in several colors—on a variety of materials.

FREE: For complete information, write for booklet, OZALID Dept.H-108, Johnson City, N. Y. Or call your local distributor.

**If light won't shine through your original, an inexpensive intermediary step is taken.*

Cut Copying Costs...Use OZALID

Johnson City, New York. Ozalid in Canada—Hughes Owens Co., Ltd., Montreal

A Division of General Aniline & Film Corporation. *"From Research to Reality."*

BREVITY—Identify by IEN - 4239 if you write the maker

Cut Production Costs . . . Permit Ease of Assembly

HERE'S HOW

- Eliminate skilled labor in key seat cutting and key fitting operations.
- Are easy to assemble because of flat key bottom and starting radius.
- Key reaches deep into shaft and is firmly imbedded, enabling it to withstand greater strain.
- Offer greater resistance to shaft fracture due to shape of key set and permanent key fit.
- Simplify key seat cutting in tapered shafts.

Whitney Woodruff Type Keys are made to American Standard sizes and Whitney Standard sizes for special application. They are available from Whitney distributors throughout the country or write:

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 4240 if you write the maker

Hard To Find ... but we have them!

Lathe Cut Parts · Recessed Bumpers · Mushroom Bumpers · Plug-Type Bumpers · Grommets · Suction Cups · Chair Tips · Tack Screw Bumpers

WORLD'S LARGEST ASSORTMENT OF STANDARD MOULDS FOR SMALL MECHANICAL RUBBER PARTS

SAVE MONEY! SEE US BEFORE YOU DESIGN IT!
Write, wire or phone your needs today! Chances are we have just the mould you want! Lowest possible prices — prompt, efficient service. Request new 44 page catalog, today.

LAVELLE Rubber Company
1811 W. Hubbard St., Chicago 22, Ill.

BREVITY—Identify by IEN - 4241 if you write the maker

TEMCOMETER
Temperature Controller and Indicator

Combines in a single, compact unit an advanced type of input controller and an indicating pyrometer. Unlike other type controllers, the *Temcometer* automatically maintains even temperature regardless of fluctuations in line voltage. A sensitive panel-operated thermostatic switch can be set to regulate current input into the heating equipment anywhere from 5% to 100% time "on."

Originally designed as a built-in feature of Temco electric furnaces, this complete control unit is now made for use with other makes of furnaces and electric heating devices.

Made both with and without pyrometer for maximum loads ranging from 2.3 to 5.7 kw. Priced from $38.50 to $62.50.

Write for new handy Reference File and dealer's name.

THERMO ELECTRIC MANUFACTURING CO.
482 Huff St., Dubuque, Iowa.

BREVITY—Identify by IEN - 4242 if you write the maker

LOW-COST PROTECTION FOR TUBING AND TUBULAR PARTS

S.S.WHITE Elastoplastic
PLUGS and CAPS

Slipped into or over the ends of plain tubing, these plugs and caps protect the ends and keep out dirt and moisture.

Made of flexible Vinylite plastic, they are resistant to most oils, offer high electrical insulation, and are easily applied and stay put. For details

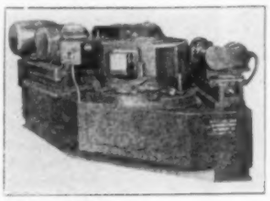
WRITE FOR BULLETIN P-4704.

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.

BREVITY—Identify by IEN - 4243 if you write the maker

MILLING . . Three-station machine to face and center-drill parts, shafts

Source: MOTCH & MERRYWEATHER MACHINERY CO.
715 Penton Bldg., Cleveland 13, Ohio



The work table in this new combination face-milling and center-drilling machine measures 48 in. in diameter and holds three work-clamping fixtures. It indexes the fixtures into position, first between two heavy-duty Type M-30 milling heads, then between opposed single-speed center-drilling heads and finally returns the work to loading and unloading position. The clamping fixtures will take forgings or shafts from 4 to 16 in. in length and will perform the operations at the rate of 220 to 240 pieces per hour.

Drive for the milling head takes motors to 30 hp. A hydraulic pump driven by 7½-hp. motor supplies the pressure for indexing. The index action is relieved during the rotation and is clamped solidly at each machining station. There are 2 in. of quill adjustment for cutter setting and wear on the milling-head assembly. Hydraulic pressure is employed to clamp the work as well as to index the table.

BREVITY—Identify by IEN - 4244 if you write the maker

DISPENSING . . Bag loader head for soapstone dispensing machine

Source: FALLS ENGINEERING & MACH. CO.
51 Industrial Ave., Cuyahoga Falls, Ohio

Soapstone dust cannot escape and fill the air around this dispensing machine when it is equipped with the new loader head shown at the top of the illustration. A bag of soapstone is placed on the spike equipped door at the side of this head for loading into the machine. Then the inside edge and end edges of the bag are split and the door is hinged up for closing. The dust drops into the chambers of the machine from where it can be blown out for use in connection with rubber extruding operations. As soon as the bag has been dumped another can be positioned to be ready as soon as it is needed.

BREVITY—Identify by IEN - 4245 if you write the maker

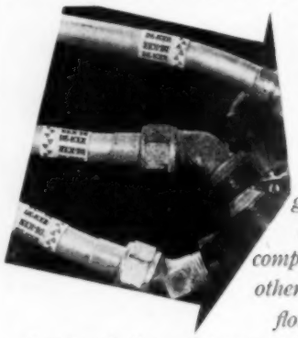
MOTORS . . Booklet of construction features for company's Life-Line dc. motors and generators

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Pictures show construction of Type-SK electric motors and generators in new 16-page Bulletin B-4504. They detail such points as pre-lubricated bearings, rolled-steel frame, armature, brushholders, field coils, ventilation, enclosure types, mounting methods, snap-in inspection covers.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 4246 if you write the maker



new... efficient method of marking *fuel, oil, gas, hydraulic, water, oxygen, compressed gas and other industrial flow lines*

Speed production, maintenance and repair operations with E-Z Code Fluid Line Markers. Extensively used in the aviation industry, E-Z Codes are now being used as flow-line markers in many industrial applications.

E-Z Codes are pressure-sensitive and are applied without moistening with fingertip pressure. They will not pop, peel or curl even in extreme changes of heat and humidity. They are available in standard symbols and codes for all types of flow-lines. They conform to the new international AND-10375 as well as AAF-27643 and can be produced to your size and printing specifications. Learn the facts on E-Z Code Fluid Line Markers.

SEND FOR SAMPLES AND DETAILS
E-Z CODE SELF-ADHESIVE MARKERS
Western Lithograph Co., Dept. IEN-4, 600 E. Second St., Los Angeles 54, Calif. Box 3804, St. Louis 22, Mo., Rocket Distributors, Bayside, Long Island, N. Y.

BREVITY—Identify by IEN - 4247 if you write the maker

HEADQUARTERS FOR APRONS

FLAME · WATER & DAMP · ACID RESISTANT

BASCO APRONS are strong and long wearing. Correctly designed and cut for comfort and complete satisfaction. They are available in cotton, rubber and plastic. DON'T BUY APRONS UNTIL YOU GET OUR PRICES AND SAMPLES.

Write today for this handy Buyers Guide. It is profusely illustrated to show protective sleeves, gloves, aprons, bags and other industrial items. We also make special canvas items of every description.

ASSOCIATED BAG & APRON CO.
2650 West Belden Ave. • Chicago 47, Illinois
Phone: Albany 2-7121

BREVITY—Identify by IEN - 4248 if you write the maker

RUBBER

SERVICEABLE AT 100°BELOW ZERO! 500°ABOVE ZERO!

SILICONE RUBBER, with its unusual characteristics, opens up vast new design possibilities. Arrowhead, in pioneering the fabrication of silicone over the past three years, has accumulated a store of experience and know-how which is available to you.

SLEEVES and DUCTS
Versatile —AIRTRON*— flexible fiberglass ducting and couplings are now available of impregnated or laminated silicone rubber.

MOLDED SILICONE
Silicone rubber "O" rings, grommets, packings and special molded mechanicals of all kinds are a part of daily production in Arrowhead's Silicone Department.

DIE CUT SILICONE
Silicone sheet and silicone coated fiberglass are ideal materials for die-cut gaskets and other high temperature parts. ARCOSIL gaskets are standard service items for major airlines.

EXTRUDED SILICONE
Arrowhead silicone tubing and extrusions are finding new uses where exceptional properties under unusual conditions are required.

WRITE FOR FREE BULLETIN GIVING SILICONE RUBBER DATA

*Sole Manufacturers—Trade Mark Registered.

ARROWHEAD RUBBER CO. DOWNEY, CALIFORNIA
DIVISION OF NATIONAL MOTOR BEARING CO. INC.
ENGINEERED RUBBER PRODUCTS Sales Engineers in Principal Cities
"O" RINGS • SILICONES • PRECISION MECHANICALS • -AIRTRON- DUCTS

BREVITY—Identify by IEN - 4250 if you write the maker

The adjustable handle makes it possible to scrub and wax polish in congested places where hand cleaning was necessary before—around and under machines, counters, desks, lockers, etc.

Operator can raise or lower handle to any angle within an 80 degree arc and shove the Lawlor under anything where there is at least a 9½" opening and as far back as 4½ feet. Three models — a size to suit every need.

Write for literature on adjustable handle models and other Lawlor units.

There's a complete line of Lawlor Floor Maintenance Equipment — scrubbers, wax polishers, mopping tanks, mop wringers.

S. C. LAWLOR CO.
Quality Floor Equipment for 38 years
130 N. ABERDEEN ST., CHICAGO 7, ILL.

BREVITY—Identify by IEN - 4251 if you write the maker

M·S·A

Pneolator

The NEW-SAFE Apparatus for Automatic Artificial Respiration in ALL Cases of Arrested Breathing

The nearest mechanical approach to *natural* respiration . . . automatically inflates lung with selected pressure of oxygen, rhythmically, effectively, safely. *No suction cycle*—normal passive return of muscles and lungs produces exhalation. Immediate change-over to inhalator action when patient starts breathing. Housed in rugged, strong Fiberglas carrying case for easy portability. To give victims of asphyxia a better chance for recovery—have a Pneolator always ready. Ask for new Bulletin No. CH-3.

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS and MEADE STREETS • PITTSBURGH 8, PA.
At Your Service
54 BRANCH OFFICES IN THE UNITED STATES AND CANADA

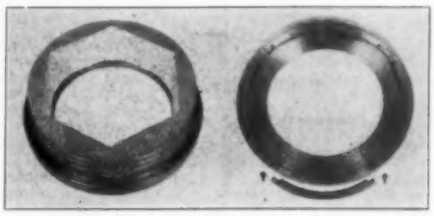
CALL THE M.S.A. MAN ON YOUR EVERY SAFETY PROBLEM . . . HIS JOB IS TO HELP YOU.

MSA SAFETY EQUIPMENT HEADQUARTERS

BREVITY—Identify by IEN - 4253 if you write the maker

GRINDING . . Abrasive cylinder wheel and holder measures 18 in. in diameter

Source: AMERICAN EMERY WHEEL WORKS
3 Richmond Square, Providence 1, R. I.



Hexilinder trade names new 18-in. abrasive wheel for use with a wedge-type holder in vertical surface grinding machines. The wheel is solid, measures 14 in. across between the flat internal faces of its hexagon opening. It stands 5 in. in height. Application in the holder is by cushion-faced circular segments that are drawn by screws into the tapered recess in the rim of the holder body. The segments exert equalized inward pressure on the wheel to center and hold it securely.

The solid wheel is suited particularly for introduction of cooling water at the center of rotation. It can be changed quickly in the holder. It includes a total of 445 cu. in. of abrasive grain in its structure. It gives good performance on thin work, helps hold down small work pieces so they will not be thrown from a holding chuck.

BREVITY—Identify by IEN - 4254 if you write the maker

SHEARING . . Squaring machines, 3/16 in. by 12 ft. to 1¼ in. by 6 ft.

Source: COLUMBIA MACHINERY & ENGINEERING CORP.
High & 4th Sts., Hamilton, Ohio

Specifications upon request

New sizes have been added to the company's line of power squaring shears so the new line now includes assemblies to cut 3/16-in. mild steel to 12 ft. in length, ¼-in. to 14 ft., ⅜-in. to 20 ft., ½ and ¾-in. to 14 ft., 1-in. to 12 ft., and 1¼ in. to 6 feet. The drive is transmitted in the new design by an air-operated disc clutch assembled in the flywheel and controlled by a solenoid through a jog switch or foot switch. Full radius capacity is obtained with 80-lb. air pressure.

Each machine is equipped with a spring-operated disc brake to stop and hold the upper slide in any position for blade adjustment, at top position for regular operation, or to stop the movement in the event of air or power failure. Slides are counterbalanced and operate on flat guideways. The counterbalance exerts a slight backward pressure holding the slide against the guide bearings to eliminate knife float.

Hydraulic hold-downs are standard equipment. They do not require any adjustment for varying thicknesses of stock. On 3/16-in. machines the table is non-adjustable with necessary adjustment made at the back brace. On larger machines the table is adjustable forward or back to obtain desired knife clearance. Each machine is equipped with a 10-ft. range squaring arm, steel scale and hinged gage and stop, with a 50-in. range front gage, light gage for scribe line shearing and motorized front-operated micrometer back gage with 24 or 36-in. range graduated in sixty-fourth inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4255 if you write the maker

WILLIAMS-HAGER FLANGED Silent CHECK VALVES

Wherever Williams-Hager flanged Silent Check Valves are installed, plant maintenance men will tell you their costly water hammer troubles are over. These dependable, durable and compact valves can be placed in your water system in any position, including angular, and will provide maximum protection at all times. They are available for every service in standard pipe sizes from 1" to 20". Why not rid your plant of water hammer *now* . . . get Williams-Hager Check Valves.

Write today for Bulletin WH-100.

THE WILLIAMS GAUGE CO.
Pump Valves . . . Water Gauges . . . Gauge Cocks . . . Steam Traps . . . Pump Governors . . . Feed Water Regulators . . . Water Columns
2900 PENNSYLVANIA AVE. • PITTSBURGH 33, PA.

BREVITY—Identify by IEN - 4256 if you write the maker

Self-contained electrically operated TEMPERATURE REGULATORS

Featuring CALIBRATED dials and TIGHT CLOSING

TWO MODELS—Standard Sizes

Model ADFE for ½" to 2" pipes (6 sizes). Positive *motor-driven* power operator closes valve *tightly*. Delivered completely assembled, ready for installation. Temperature range, choice of 50°-130° or 120°-200°F. with *calibrated dial*.

Model FYBE for ¾" to 4" pipes (8 sizes). Has heavy-duty motor-operator for installations involving higher pressures and larger capacities. Both models connect direct to 60-cycle A.C., 115 or 230-volt as specified.

for HOT WATER STORAGE TANKS
BOTTLE WASHERS
BATCH KETTLES
and other two-position on-off applications

Write for Literature
Ask for Bulletin F-4695

BARBER-COLMAN COMPANY
1204 Rock Street • Rockford, Illinois

BREVITY—Identify by IEN - 4257 if you write the maker

END SCRAP PROBLEMS WITH THE ELOX M-10 RADIAL ELECTRON DRILL!

Completely *automatic* and as simple to operate as a drill press the Electron Drill will disintegrate a broken tap, drill, reamer; alter a mold or die; enlarge keyway slots in cutters or dies. Reasons enough why the largest automotive plants use three and four of this model on salvage alone! The Electron Drill cuts diamond hard steel without any special preparation. Cutting speeds and workmanship fully guaranteed.

The ELECTRON DRILL is used and sold internationally.

ELOX CORPORATION OF MICHIGAN
740 N. Rochester Road • Clawson, Michigan

BREVITY—Identify by IEN - 4258 if you write the maker

BARNES WAVY SET BAND SAWS

CUT THIN SECTIONS WITHOUT STRIPPING OF TEETH!

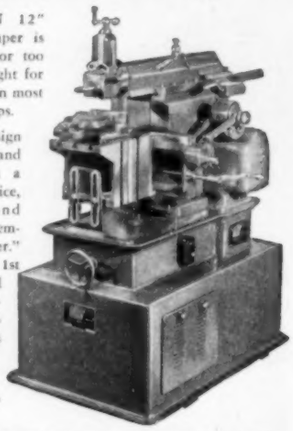
Barnes wavy set blades are especially designed to cut thin sections without stripping. Each tooth removes its proportionate share of metal without taking the shock of a full cut. This distribution of shock load prevents stripping—assures efficiency for which Barnes Blades are famous. Used on all Band saw machines—you can depend on Barnes all ways.

YOUR DISTRIBUTOR CARRIES A FULL STOCK OF BARNES SAWS

BARNES
ESTABLISHED 1919
W. O. BARNES CO., INC.
1297 TERMINAL AVE. • DETROIT 14, MICH.

BREVITY—Identify by IEN - 4259 if you write the maker

Big Shaper Performance Small Shaper Price



The SHELDON 12" Back - Geared Shaper is neither too big, nor too small. It is just right for most shaper work in most tool rooms and shops.

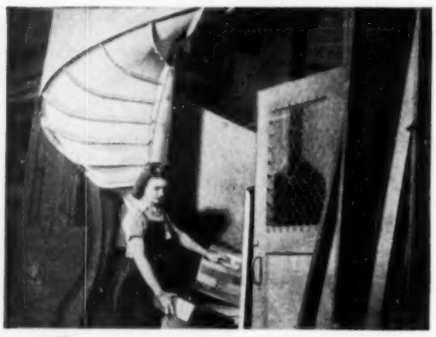
In weight, design features, capacity and performance, it is a "big shaper." In price, operating cost and floor space, it resembles a "small shaper." It is the logical 1st shaper for the small shop and a cost-cutting tool in multiple installations in large plants.

Write for Catalog.

SHELDON
CHICAGO

SHELDON MACHINE CO., Inc., 4208 N. Knox Ave., Chicago 41, Illinois

BREVITY—Identify by IEN - 4260 if you write the maker



Standard SPIRAL CHUTES

...MOVE MERCHANDISE FROM UPPER TO LOWER FLOORS — *FAST* — *AT LOW COST*

Scientifically designed, properly pitched Standard Spiral Chutes are effective time, work and money savers. Engineered in a wide range of types and sizes. Cost nothing to operate. Get complete information — send for Bulletin No. IEN-41.

STANDARD CONVEYOR COMPANY
General Offices — North St. Paul, Minn.
Sales and Service in Principal Cities

Visit Us at Booths 148-149, National Materials Handling Exposition International Amphitheatre, April 30-May 4, Chicago

BREVITY—Identify by IEN - 4261 if you write the maker

The KING of STROKE and REVOLUTION COUNTERS

BETTER beyond comparison
say thousands of users

Used by the thousands in Auto and Aircraft Factories, Metal Working, Die Casting, Plastic Molding and Stamping Plants.

Rugged as an army tank, yet operate smooth as a watch.
Precision built of life-tested Materials.
Tamperproof Reset.
Streamlined—All steel housing.
Complete range of models.

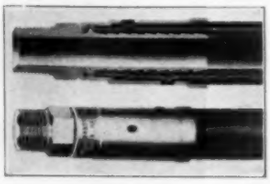
PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.
Please send Catalog of Silver King Counters and Brief Catalog MODERN Counting Devices.

Company_____
Name_____ Title_____
Street_____ City_____ Zone____ State_____
SK-11

BREVITY—Identify by IEN - 4262 if you write the maker

HOSE . . Hydraulic assembly, length to 50 ft., pressure to 5,000 lb.

Source: MULCONROY CO.
5325-29 Jefferson St., Philadelphia 31, Pa.



Press - Lock trade names new end-fitting design available in high, medium and low-pressure hose assemblies for hydraulic service. The high-pressure unit, known as Victor, ranges from $\frac{3}{16}$ to 2-in. in internal diameter, from ½ to 2¾ in. in external diameter. The end fittings are threaded for ⅛ to 2 in. pipe.

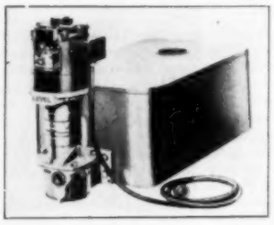
The fitting consists of a corrugated thimble carrying a collar just back of its hexagon head. This collar engages a ring which, in turn, engages the sleeve that is closed in upon it by hydraulic pressure in assembly of the hose on the nipple. Drilled openings in the sleeve permit the mass of rubber and the reinforcing braid to move outward in a locking displacement action. A ¼-in. hose assembly with two-wire reinforcing braid rates to 5,000 lb. in maximum working pressure. The ¼-in. size with a single braid rates 2,500 pounds.

Bulletin A-50, "Mulconroy Hydraulic Hose Assemblies", 8 pages, presents illustrated text and size and pressure tabulations covering high, medium and low-pressure assemblies.

BREVITY—Identify by IEN - 4263 if you write the maker

PUMP . . Motor driven centrifugal and a tank for coolant circulation

Source: DELTA POWER TOOL DIVISION
614 E. Vienna Ave., Milwaukee 1, Wis.



Centrifugal pump with a ¼-hp. motor is mounted with a 16-gal. tank that includes a settling basin and wire mesh screen in this new coolant-circulating assembly. Complete equipment includes a nozzle, valve, column-mounting clamps, and a flexible-hose assembly for installation at one or more spindles. The pump rates 6 to 32 gpm., has capacity to serve eight machine spindles.

BREVITY—Identify by IEN - 4264 if you write the maker

TESTING . . How-it-works description in bulletin on unit to measure powder particle size

Sharples Corp.
340-44 W. 4th St., Bridgeport, Pa.

Operating principle is described at the start of new 17-sheet looseleaf bulletin on the company's Micromerograph instrument to measure particle-size distribution of fine-sieve and sub-sieve powders. This is followed by a detail description, a report on operating range, and a comparison table.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 4265 if you write the maker

Weighs Less... and way less trouble

because it's Well-Cast

This Well-Cast magnesium permanent mold wheel casting—a 1¼ lb. light weight—reduces the overall weight of the hand truck on which it's used. Tough as an American in Korea, it's also a push-over to machine. Same thing applies to our sand castings in either magnesium or aluminum. Want to lose some weight?

40 Years' Experience

Well-made wood and metal patterns • If you would like to get the Wellman magazine each month, drop us a note on your business letterhead.

THE WELLMAN BRONZE & ALUMINUM CO.
2510 EAST 93rd STREET ★ CLEVELAND 4, OHIO

BREVITY—Identify by IEN - 4266 if you write the maker

These HYDRAULIC GAUGES can TAKE A BEATING

Where a hydraulic gauge has to lead a tough life, insist on Schrader. These rugged hydraulic gauges withstand shock and overload without losing their efficiency because they're built on the Schrader *Direct Action* Principle and incorporate a built-in snubber.

New Schrader HYDRODIAL GAUGE
Clear, durable plastic face.
Pressure Ranges from 5-50 to 500-5000 lbs.
Readable 50 ft. away!

STANDARD GAUGES

Open Type

Enclosed Type

Pressure ranges 5-50 to 1500-5000 lbs.

For Long Life and Easy Maintenance Always Specify Schrader

Write for complete information and literature about Schrader Hydraulic Gauges. For information about hundreds of other Schrader Air Control Products... Air Filters, Air Cylinders and Valves, Press Controls etc., ask for 72-Page Catalog.

A. SCHRADER'S SON
476 Vanderbilt Avenue
BROOKLYN 17, NEW YORK, Dept. IN-4
Division of Scovill Manufacturing Company, Inc.

Schrader

BREVITY—Identify by IEN - 4267 if you write the maker

MODEL 1000-M
Super Heavy Duty with forward and reverse drive, 100% visibility.

CUTS *Your* SWEEPING COSTS 75%

Are costs getting the best of you? Is manpower a problem? Forget it—get a WILSHIRE Power Sweeper—the one-man gang that picks up everything from cigarette butts to pop bottles in one easy operation—does it so efficiently that users from coast to coast report reductions in cleanup costs of 75% *and more.* Make us prove it—with a FREE demonstration on your job. Write today for full information.

MODEL 500
America's favorite Heavy Duty Sweeper with finger-tip dual control. (Sulky optional.)

FACTORY TESTED... 90-DAY GUARANTEE

For dealer nearest you write Dept. F-4

Wilshire POWER SWEEPER CO.
526 W. Chevy Chase Drive
Glendale 4, Calif.

SWEEPING THE COUNTRY SINCE 1940

BREVITY—Identify by IEN - 4269 if you write the maker

CONTROLS PERFORM IMPORTANT RESPONSIBILITIES, AND SHOULD BE SELECTED WITH DISCRIMINATION

FOR INDUSTRIAL APPLICATIONS REQUIRING POSITIVE CONTROL OF PRESSURE, TEMPERATURE, LIQUID LEVEL, ETC.

MERCOID

Is your guarantee of Complete Satisfaction

WRITE FOR CATALOG 700 -- PLEASE MENTION THIS PUBLICATION

THE MERCOID CORPORATION • 4201 BELMONT AVENUE • CHICAGO, ILLINOIS

BREVITY—Identify by IEN - 4270 if you write the maker

A Coated Product for EVERY Abrasive Need

CARBORUNDUM gives production management a valuable "assist" in the correct application of coated abrasives by offering a *complete* line, from which the proper selection can be made. This abrasive selectivity provides reductions in unit cost, higher efficiency in processing and improved product quality. Investigate its advantages *now!*

• • •

BELTS—including new and improved products — in a wide range of sizes, grits, bonds and backings.

ROLLS featuring tough, durable abrasive grain for economy and highest productivity.

DISCS meeting wide extremes of operation normally encountered.

SHEETS with new flexible backings, greater adhesion, increased pliability...and other characteristics common to improved products by CARBORUNDUM.

Also a complete line of bonded products and abrasive grain.

Only

CARBORUNDUM

TRADE MARK

makes **ALL** *abrasive products ...to give you the proper* **ONE**

"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company, Niagara Falls, N.Y.

BREVITY—Identify by IEN - 4272 if you write the maker

MOTOR CONTROL . . Manual starter has bi-metal relay overload protection

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Motor Watchman is a new manual motor starter rating to 7½ hp. on polyphase circuits and to 5 hp. single phase on 600 volt ac., also to 1½ hp., 220-volt dc. The unit is available to start, stop, reverse and protect small polyphase ac. motors. It can be supplied also as a starter for two-speed two-winding motors. Standard, dust-proof and water-tight explosion-proof enclosures are included in the line.

Motor protection is by a bimetal overload relay. Arc quenchers confine, divide and extinguish the arc, on circuit opening, in ½ cycle or less. Quick-make, quick-break, over-center toggle mechanism is operated by a handle.

BREVITY—Identify by IEN - 4273 if you write the maker

VALVE . . Plug type globe design particularly suited for throttling use

Source: FAIRBANKS CO.
395 Lafayette St., New York 3, N. Y.

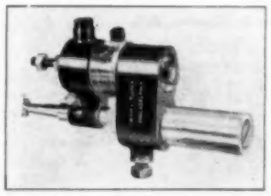
Please note our errors

In error, we located the seating shoulder for repacking under pressure below instead of above the stem threads in the company's valve, previously described IEN-2738-51. Actually it is above the threads where it is protected from flow through the valve and not subject to deposits of foreign matter. Also we were wrong in stating that the valve is designed for full-flow operation. Actually it is primarily for throttling service.

BREVITY—Identify by IEN - 4274 if you write the maker

LATHE TOOLS . . Adjustable recesser also suited for external operations

Source: R & L TOOLS
1823-27 W. Bristol St., Philadelphia 40, Pa.



New tool mounts a pivoted head equipped with two set screws operating against stops to set for depth or diameter of a recess. Tool shanks and cutters are interchangeable in the head. A stop is provided also for depth positioning. The tool carries a straight shank.

Three sizes have shanks measuring ⅝ by 1½ to 1 by 2 inches. Body length is 1¾ to 2¾ inches. Operation can be set up for the lathe to rotate in either direction and with pressure downward in both cases.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4275 if you write the maker

TACK WITH AIR

use **DUO-FAST** AIR TACKERS

CHAIR COVERING TACKING

TELEVISION WIRE TACKING

TRIGGER-FAST
30 Staples in 10 Seconds

Save time and money on your tacking applications with these speedy air-driven tackers.

Operate on 85 pounds air pressure. Easy to use—flick the trigger and—zip—the tight-holding staple is driven right where you want it.

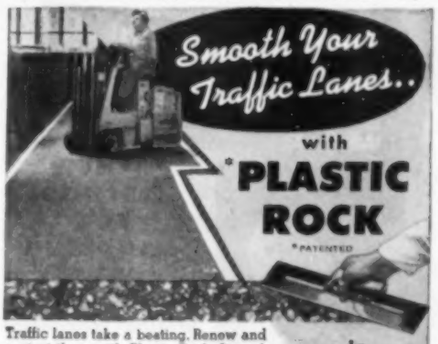
You can do more tacking work with fewer workmen using Duo-Fast Air Tackers. And girl operators can be used.

30 models including one to save time and money in your plant.

Write today for complete details on Duo-Fast Air Tackers—also information on hand operated Duo-Fast Hammer and Gun Tackers.

FASTENER CORPORATION
862 FLETCHER STREET • CHICAGO 14, ILLINOIS

BREVITY—Identify by IEN - 4276 if you write the maker



Traffic lanes take a beating. Renew and protect them with Plastic Rock. It packs hard, improving under heavy traffic. Ten-year old floors show no wear. Plastic Rock reduces noise, is fire-resistant, skid-safe, wet or dry; bonds perfectly to concrete, wood or steel. All ingredients packed complete in a handy barrel. Your own crew or contractor can easily apply. Plastic Rock puts shock-absorbers on your floor.

In 48 HOURS!

Ask for Report 220-Q-4.

UNITED LABORATORIES, INC., 16603 Euclid Ave., Cleveland 12, Ohio

PRODUCTS AND PROCESSES for PROTECTING PROPERTY

Field Representatives All Over The World

BREVITY—Identify by IEN - 4277 if you write the maker
A PAID NEWS ADVERTISEMENT BY CRANE PACKING CO.

COMPOUND . . Pipe Joint U. L. Approved. Prevents thread leakage and never dries out

This approved all-purpose sealing compound, called Plastic Lead Seal, is safe to use on a large number of "hard to seal" dangerous services. It will definitely prevent thread leakage — even under the most severe conditions of pressure, temperature, vibration, expansion, and contraction.

One of the most important features of this product is that it will never dry out or harden. Thus threaded joints can readily be taken apart, even after years of service.

PLS is insoluble in a wide variety of gases and liquids, including such services as steam, water, ammonia, freon, benzine, ethylene glycol, methyl chloride, propane, butane and other petroleum liquids and gases. It resists washing out by gases or liquids under pressures up to 6000 psi, and is recommended for temperatures to 500° F.

It is also widely used as a gasket compound because of its insolubility in so many services — and because it allows gaskets to be easily removed and re-used many times.

Packaged in 1, 5, 15 or 50 lb. cans, Plastic Lead Seal is easily applied and handy to use. The manufacturers will furnish a free sample jar for test purposes, on request.

Direct your inquiry on firm letterhead to the manufacturer: Crane Packing Company, Dept. IE-4, 1815 Cuyler Ave., Chicago 13, Ill.

JOHN CRANE Trade Mark

CRANE PACKING COMPANY
Dept. IE-4, 1815 Cuyler Ave., Chicago 13, Ill.

BREVITY—Identify by IEN - 4278 if you write the maker

POWERS

DIAL THERMOMETERS

VARIETY OF RANGES

Help Cut Costs—

For more accurate temperature readings and improved efficiency use POWERS Dial Thermometers. They're vapor pressure actuated. Have 4" dials with either rigid stem for use in pipe lines and tanks or flexible tubing type for conveniently showing the temperature at a remote point. (DT)

▶WRITE FOR BULLETIN 355 • THE POWERS REGULATOR CO.
2737 Greenview Ave., Chicago 14, Ill. • Offices in 50 Cities

BREVITY—Identify by IEN - 4279 if you write the maker

Introducing the...
Alemite Versatal
SPRA-KING

A NEW METHOD FOR HANDLING PAINT right from the original container!

It's fast! No shutdown for refill!

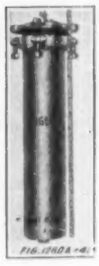
FREE—write now for literature giving full data. Alemite, Dept. B-41, 1830 Diversey Pkwy., Chicago 14, Illinois.

ALEMITE Versatal

Another Product of Stewart-Warner

BREVITY—Identify by IEN - 4280 if you write the maker

Here's what you get with NUGENT FILTERS for fuel and lube oil



- More filtering area
- More effective filtering
- Choice of full flow or by pass filtering
- Choice of inexpensive recharges
- Simple piping
- Capacities to meet every need

NUGENT Absorbent Type Fuel and Lubricating Oil Filters pay off for you in many ways—they conserve your oil . . . they extend the life and improve the service you get from your equipment . . . they are available at the lowest over all cost per square inch of filtering area. Add to these such additional advantages as ease of installation, economy of recharging and high filtering efficiency and you'll see why we say you can't afford to be without Nugent Filters.

Write today for descriptive literature outlining the nature of your filtering problems. It's the first important step towards big savings.

NUGENT TRADE MARK Est. 1897

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO, 22, ILLINOIS

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

BREVITY—Identify by IEN - 4281 if you write the maker

Want to know more about GAS ANALYSIS?

READ THIS NEW 8-PAGE ENGELHARD BULLETIN

Look at these typical data-packed pages

YOU WILL FIND a wealth of material on a wide range of gas analysis problems and their solutions in the new Engelhard 8-page illustrated bulletin. It explains how Engelhard equipment provides complete, sensitive, accurate analyses by the proven thermal conductivity method. The bulletin also contains a *valuable thermal conductivity table* that you will want to keep for handy reference. *Write for your free copy today. Ask for Bulletin 800A.*

Please send me FREE copy of Bulletin 800-A on Gas Analysis.
Name .....
Company .....
Address .....
City ..... State X1234

CHARLES ENGELHARD, INC.
850 PASSAIC AVENUE, EAST NEWARK, N. J.

BREVITY—Identify by IEN - 4282 if you write the maker

TIMING . . Electronic instrument reads duration of small time intervals

Source: AMERICAN CHRONOSCOPE CORP.
314-18 W. First St., Mount Vernon, N. Y.

Model 110 is a new design that has been added by the company to its Model-100 electronic Chronoscope previously described IEN-10661-49. Model 211 is a new input adaptor, available with the Chronoscope, to separate the functions of starting and stopping the measurement of time intervals between the operation of one component and the subsequent operation of another without stopping the action or synchronizing the indicating device. There are eight scale ranges for measuring time to maximums of 1, 3, 10, 30, 100, 300 milliseconds and to 1 and 3 seconds.

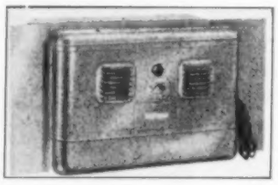
Operation is based on the principle that a charged capacitor will lose a definite percentage of its charge when connected across a resistor for a definite period of time. This percentage is indicated by a pointer coupled to a potentiometer. Accuracy is within 1 per cent of full scale in any range. When the pointer starts and a reading is indicated there will be no drift until a reset button is operated. It is possible to measure directly the duration of an open circuit, short circuit or voltage pulse of 6 volts or more.

The adaptor has a set of input terminals marked "start" into which information is fed establishing the beginning of the time intervals to be measured. It has another set marked "stop" for information to establish the end of a time interval. A selector switch for each set of input terminals permits independent choice of the nature of the start and stop signals, which may be voltage pulse, short circuit or open circuit. Sensitivity controls permit suppressing the effect of signals of smaller magnitudes than those desired. A lock-out feature prevents accepting a stop signal until a previous start signal has been received. Operation is on 110-volt, 60-cycle ac.

BREVITY—Identify by IEN - 4283 if you write the maker

VENTILATING . . Dual blower unit delivers air over wet cooling pads

Source: PALMER MFG. CO.
2202 W. Fillmore St., Phoenix, Ariz.



Capacity is 320 cfm. for this new Twin Junior ventilating unit in which motor-driven dual blowers deliver air over pads that are kept moist by a trough-type water-drip mechanism. The trough is served by a pump that circulates the water from a 4½-gal. reservoir in the housing. The unit mounts in a window opening. The housing is 21 by 12 by 15 inches. List price is about $70.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4284 if you write the maker

This Is A War Child..

You can help her, or thousands like her by becoming a Foster Parent . . . It costs only $15 a month. You will receive a case history and photograph of the child. Correspondence through our office is encouraged.

For further information write:

FOSTER PARENTS' PLAN FOR WAR CHILDREN
55 West 42nd St., New York City 18

BREVITY—Identify by IEN - 4285 if you write the maker

Its all in the Heat Treatment

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting —The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

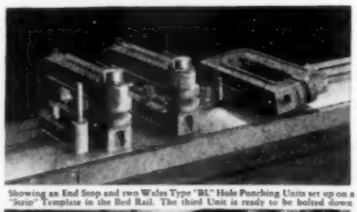
WRITE TODAY for ADDITIONAL INFORMATION

We are also manufacturers of—
- Special branding and knurling wheels.
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

We are Moving Into New and Larger Quarters
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.
PITTSBURGH STENCIL and TOOL COMPANY

BREVITY—Identify by IEN - 4286 if you write the maker

You don't need expensive die sets with WALES HOLE PUNCHING & NOTCHING UNITS



Showing an End Stop and two Wales Type "BL" Hole Punching Units set up on a "Strip" Template in the Bed Rail. The third Unit is ready to be bolted down.

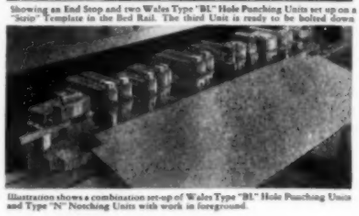


Illustration shows a combination set-up of Wales Type "BL" Hole Punching Units and Type "N" Notching Units with work in foreground.

● The exclusive Wales "Strip" Template Mounting Method for press brakes provides faster set-ups, reduced press "down-time" and easier storage of templates,—all *without the use of die sets.*

As shown above, this Mounting Method is made in 2 parts—(1) the Bed Rail and (2) the "Strip" Templates that fit into the bed rail channel. In this way, the Bed Rail remains in the press and the "Strip" Templates are interchanged for unlimited set-ups.

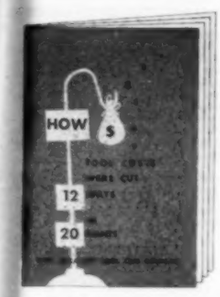
The hole locations are drilled and reamed in the "Strip" Templates for the pilot pins that are concentric with the punches and dies in all Wales independent, self-contained Units. In many cases, holes for several set-ups may be drilled in one "Strip" Template. The press ram does not have to be adjusted between set-ups due to the uniform shut height of Wales Hole Punching and Notching Units. In addition, the same group of Units may be used on an unlimited number of "Strip" Templates.

THE MULTIPLE SAVINGS IN TIME AND INVESTMENT with Wales Equipment is too BIG a story to tell in this space, so write for fully-illustrated, functionally-colored Catalog BL and Catalog N *today.*

WALES-STRIPPIT CORPORATION
GEORGE F. WALES, *Chairman*
361 PAYNE AVE., NORTH TONAWANDA, N. Y.
(*Between Buffalo and Niagara Falls*)
WALES-STRIPPIT OF CANADA, LTD., HAMILTON, ONTARIO

Specialists in Punching and Notching Equipment

▼ BREVITY—Identify by IEN - 4288 if you write the maker ▼



20 PLANTS REPORT McCASKEY TOOL CRIB CONTROL RESULTS

New 12-page booklet that tells how these plants stopped loss and theft of tools, reduced crib inventories, cut idle waiting time of men and machines, reduced breakage, stopped disputes about tools—and more, too, with McCaskey Tool Crib Control. All, as reported by their engineers and shop executives.

Write today for your copy of "How Tool Costs Were Cut 12 Ways in 20 Plants" — Booklet A-502 IEN.

The McCaskey Register Company, Alliance, Ohio

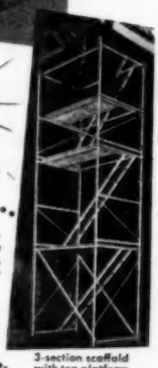
McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

▼ BREVITY—Identify by IEN - 4289 if you write the maker ▼

Compare EVERY FEATURE!

ALUMINUM SECTIONAL LADDER SCAFFOLDS

ALUMINUM SECTIONAL ROLLING SCAFFOLDS



Definitely superior in design, workmanship, durability, strength and easy assembly, these aluminum scaffolds excel for safety, convenience and economy. Approved by Underwriters' Laboratories, Inc.

Stiffer aluminum tubing means greater rigidity and lasting service. Full welds on all caped joints.

Sockets have enough clearance for ease of assembly, yet provide a rigid scaffold.

Legs may be adjusted without danger of tipping or upsetting.

3-section scaffold with top platform at intermediate level.

Single-action brake positively locks caster wheels and swivel.

• Ideal for electrical installations, maintenance and many other types of work. Get the facts! Write for FREE Bulletins PSS-20 and PSS-22. See how these scaffolds can help you.

LADDERS AND SCAFFOLDS FOR ANY PURPOSE — Any Place — Any Time

Gold Medal LADDERS SCAFFOLDING

for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.

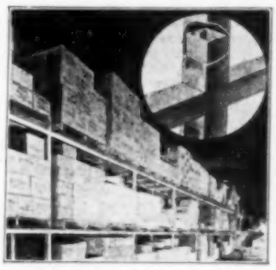
38-21 12th Street, Dept IEN • Long Island City 1, N. Y.

See Your Classified Telephone Directory for Nearest Office

▼ BREVITY—Identify by IEN - 4291 if you write the maker ▼

STORING . . Demountable racks for pallets, assemble without tools

Source: AMERICAN SALES ENGINEERS
139-43 W. Eight Mile, Detroit 3, Mich.



Rectangular steel frames with steel channels running front to back at intervals form the bed for this new Pallet Rack. At the four corners are upright stub channels with outer flange edges turned inward to form C-sections. Square steel tubular uprights fit over two of these channels snugly to bind adjacent frame corners together and to support frames superimposed. Sizes and load capacities are to specification.

▼ BREVITY—Identify by IEN - 4292 if you write the maker ▼

TUBE . . Clear flexible plastic, chemically resistant, 1/64 to 1-1/2 in.

Source: MUNRAY PRODUCTS INC.
12498-502 Crossburn Ave., Cleveland 11, Ohio

Suited excellently for laboratory use

New facilities have been installed and now are in production on the company's Cyclon clear extruded plastic tube in sizes ranging from 1/64-in. bore to 1½ in. in outside diameter. Various wall thicknesses can be specified.

The tube is odorless, permanently stable and can be employed in temperatures below 180 deg. F., the point where the thermoplastic material starts to soften. It is resistant to attack by ordinary or distilled water, alcohols, food extracts and syrups, inorganic acids, alkalis, oils and greases, soaps, aliphatic hydrocarbons. Interior surface is smooth. The tube can be cleaned with steam, autoclaved at 250 deg. F. for 15-min. periods without harmful effects.

▼ BREVITY—Identify by IEN - 4293 if you write the maker ▼

CONTROL . . Humidistat to actuate a 15 amp. 110 volt circuit

Source: ABBEON SUPPLY CO.
58-12 41st Drive, Woodside, N. Y.

List price is $45 for this new humidistat control to plug into the power line to one or more humidifiers or dehumidifiers within the 15-amp. capacity of the control switch. The unit assembles a Minneapolis-Honeywell hair-type humidistat, has a scale reading 20 to 100 per cent of relative humidity. The only requirements for installation are to plug in the power line to the equipment and to locate at a representative point.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 4294 if you write the maker ▼

LET'S GET WORKING MAD

Let's rebuild our defenses fast. Let's rearm to become strong and to stay that way.

Let's work for better productivity all along the line both in making guns, tanks and planes and in turning out civilian goods.

We can do this double job if we all work together to turn out more for every hour we work—if we use our ingenuity to step up productivity. Let's work for peace with freedom.

THE BETTER WE PRODUCE THE STRONGER WE GROW

MAIL COUPON FOR FREE COPY OF BOOKLET

TO THE ADVERTISING COUNCIL, INC.
25 West 45th St., New York 19, N. Y.

Name .....

Address .....

INDUSTRIAL EQUIPMENT NEWS

▼ BREVITY—Identify by IEN - 4295 if you write the maker ▼

Prompt Deliveries...

of

Motch & Merryweather SLITTING and SLOTTING SAWS if you order *NOW!*

★ ★ ★

A complete range of sizes available at your local dealer or from our plant in Cleveland.

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING • CLEVELAND 13, OHIO

COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

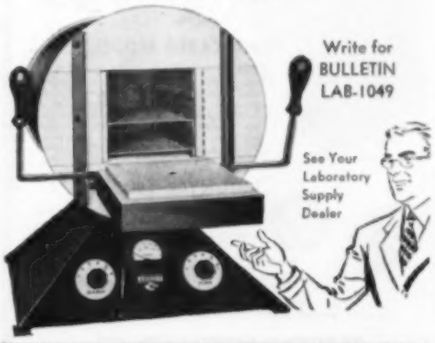
▼ BREVITY—Identify by IEN - 4296 if you write the maker ▼

HEVI DUTY ELECTRIC COMPANY

"MULTIPLE UNIT" TEMPERING FURNACE

For Temperatures to 1250° F.

A high speed centrifugal fan located in the rear of the heating chamber supplies rapid and uniform heating. Shelves and baffle are easily removed.



Write for BULLETIN LAB-1049

See Your Laboratory Supply Dealer

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

▼ BREVITY—Identify by IEN - 4297 if you write the maker ▼

the **TOUGHEST** *clean-up problem . . .*

DISSOLVED

Now—
play a jet of Metso Cleaner solution on the most stubborn dirt job in your plant.
See the difference! Metso leaves a dirt-free surface without film.

Metso's properly balanced alkali and silica components penetrate grease and dirt deposits in less time. Ask for a sample of the proper Metso Cleaner for your operations.

METSO *detergents*

Metso Granular, Sodium Metasilicate
Metso 99, Sodium Sesquisilicate

Philadelphia Quartz Company
1131 Public Ledger Bldg., Phila. 6, Pa.

BREVITY—Identify by IEN - 4298 if you write the maker

Make Ingersoll your prime source of supply for SPECIAL STEELS

Alloy Steels . . . Armor Plate . . . Clutch Plate Steels . . . Tillage Steels . . . Soft Center Steel . . . Shovel Steels . . . Knife Steels . . . Saw Steels, including High Speed Hack Saw Blade Steels . . . TEM-CROSS Steel . . . Stainless Steels . . . INGACLAD Stainless-Clad Steel

Ingersoll STEEL DIVISION

BORG-WARNER CORPORATION
New Castle, Indiana

ENGINEERING BW PRODUCTION

BREVITY—Identify by IEN - 4299 if you write the maker

ELECTRIC
TACHOMETERS
Simplified RUGGED Design

HAND MODEL

Small size and light weight — ideal for any shop and production test application. Precision made, sealed ball bearings, and the elimination of wearing parts assure constant accuracy. Models from 0-2,400 RPM + 800 FPM, 5,000, 15,000, and 25,000 RPM. $42.50 and up.

PORTABLE MODEL

Measures any rotating speed with sustained accuracy for production and laboratory use. Three-range expanded scale: 0 to 1,000; 1,000 to 2,500; 2,500 to 5,000 and other models up to 20,000 RPM. Stability assured with no contacts, brushes or batteries to wear out. Accuracy ½, 1 or 2% of full scale. $71.00 and up.

MOUNTED MODEL

Non-directional or indicating forward or reverse speeds in any required range up to 25,000 RPM. Available with SAE fittings and base mount. Calibrated to your exact needs. Completely enclosed and protected against moisture and dirt. $42.00 and up.

Special models made for any specific requirements

ELECTRO-MECHANO CO.
269 E. Erie St., Milwaukee, Wis.

BREVITY—Identify by IEN - 4300 if you write the maker

Save Space!
Save Material!

Build the Pump INTO Your Equipment with TUTHILL Stripped PUMPS

Tuthill Stripped pumps are designed to be built directly into the machine. This saves space and material, reduces costs, and enhances appearance—advantages that are more important today than ever.

Two types are available — Model S, without supporting bracket; Model SA, with pumping elements only.

Capacities from 1 to 200 g.p.m.

Applications include lubrication, coolant, hydraulic, and liquid transfer service.

Write for Tuthill Stripped Pump Bulletin.

TUTHILL PUMP COMPANY
939 E. 95th Street, Chicago 19, Illinois

APRIL 1951 INDEX TO ALL PRODUCTS

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our sixteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

A
Abrasives ... 111
Adhesives ... 90
Aerating ... 10
AIR CONDITIONING ... 46
Alloys ... 85
Aluminum ... 34
Amplifiers, Magnetic ... 46*
Aprons ... 108

B
Balancing ... 17*
Baskets ... 31
BATTERIES ... 53*, 76*
Bearings ... 2, 5, 20, 40*, 67, 68, 116
Bellows, Metal ... 23*, 27*
BELTS
Conveyor ... 34, 61
Fastenings ... 53, 95
Transmission ... 3, 67, 105
Bending ... 3, 4, 10, 47, 76*, 106*
Bimetal ... 79
Bins ... 19, 50
Blocks, Rope ... 97
Blowers ... 21, 32, 62, 101
BOARDS
Building ... 83
Bulletin ... 53
Boilers ... 54, 60, 75*, 81, 95*, 96
Bolts ... 42
Booths, Telephone ... 22
Boring ... 28, 38
Boxes ... 19, 46, 49*, 59, 72, 97
Brazing ... 2, 24*, 34*, 44
Bridges, Crossover ... 89
Bronze ... 44, 75
BRUSHES
Machine ... 93
Paint ... 80
Buckets ... 14, 78
Burners ... 54, 106
Burring ... 30, 31, 57, 76*
Bushings, Drill ... 48, 75, 91

C
Cabinets ... 58
Cable, Electric ... 3, 15, 116
Calculating ... 14*, 94
Cameras ... 3*, 61, 103*
Cans ... 71
CAPACITORS ... 76*, 77
Cars ... 79, 76*
Casters ... 8, 14*, 25, 47*, 53, 74, 96
Castings ... 67, 72, 76*, 79, 110
Catalogs, Industrial ... 83
CEMENTS
Iron ... 11
Portland ... 3
Centers, Machine ... 76*
Ceramics ... 82
CHAIN
Bead ... 60
Fittings ... 20
Load ... 27
Transmission ... 4*, 25*, 79
Chairs ... 24
Chucks ... 65, 76*
Circuit Breakers ... 12, 41
Circuits, Electric ... 1*, 87
Clamps ... 6, 17, 36*, 54, 65, 100, 114
CLEANING
Blast ... 9, 24, 92, 93
Blower ... 101
Floor ... 19*, 42, 58, 81*, 106, 109, 110
Materials ... 30, 40, 43*, 47*, 52*, 58, 64, 76*, 99, 104, 113
Salt Bath ... 84
Spray ... 7*
Tube ... 61
Vacuum ... 36, 51, 58, 67*
Washing ... 57, 101*
Clothing, Protective ... 17, 108*
Clutches ... 18, 40, 46, 65*, 66
Communicating ... 32, 34, 56, 89, 98
Compressors ... 20, 42, 76*, 77, 88, 97
Condensate Return Equipment ... 105
Conductors, Electric ... 1*, 3, 15, 26, 72, 87, 116
Connectors, Electric ... 21, 41, 69, 76, 77*, 81, 83, 96
Construction ... 48*, 83*
Contacts, Electric ... 96
Contract Work ... 23, 45, 46, 67, 77*, 93
CONTROLS
Density ... 116
Electronic ... 45*
Humidity ... 113*
Level ... 10, 23*, 99, 111
Positioning ... 16
Pressure ... 61, 97, 111
Process ... 23, 77*, 104
Production ... 113
Temperature ... 7, 29, 44, 61, 67, 97, 108, 109, 111
Viscosity ... 50
Voltage ... 44*, 46, 70
CONVEYING
Belt ... 6, 7, 24, 34, 37, 61, 78, 78*, 79*
Bucket ... 78
Chain ... 77*
Chute ... 110
Overhead ... 6, 14, 57, 107, 116
Pneumatic ... 10
Roller ... 7, 96*
Vibrating ... 26
Cooling ... 15, 26, 33, 101
Corrosion Proofing ... 38, 41*, 49*
Countersinking ... 9*
Counting ... 1*, 17, 37*, 77*, 77, 85, 92*, 96*, 110
Couplings, Shaft ... 5, 19, 31, 89
Covers, Dock ... 32
CRANES ... 31, 39, 41, 54, 94*
Drives ... 46
Crushing ... 65, 78*
CUTTING
Flame ... 6
Tools ... 9*, 31, 46, 78*, 80, 85, 95
Cylinders, Power ... 7, 39, 46, 48, 77, 86, 102*

D
Dampers ... 96
DEFENSE PRODUCTION ... 24*
Detectors, Metal ... 5
Die Castings ... 24*
Disintegrating ... 109
Dispensing ... 45, 86, 107*, 108*
Distilling ... 78*, 104
DOORS ... 18, 52, 70*
Hardware ... 82
Operators ... 40, 52, 70*
Drafting ... 25, 73, 76, 78*, 83
DRILLING
Bushings ... 48, 75, 78*, 91
Chip Breakers ... 81
Heads ... 47, 49, 81
Machines ... 8, 25*, 46*, 78*, 105*, 109
Tools ... 24*, 25, 28, 50, 51, 73*, 78*, 85
DRIVES
Adjustable Speed ... 13
Components ... 3, 5, 6*, 18, 19, 22, 25*, 31, 35, 36, 40, 46, 52, 57, 65*, 66, 67, 78*, 79, 80*, 89, 102, 105
Hydraulic ... 47, 67
Speed Reducer ... 9, 13, 27*, 73, 101*, 104
Variable Speed ... 19, 26, 78*, 93*, 107
Drying ... 28, 30, 32, 42*, 75, 83
DUCT
Electric ... 36, 72
Ventilating ... 103
Dust Collecting ... 4, 13, 19, 25*, 35, 43, 45, 68, 80*, 92
Dynamometers ... 81*

E
Electrical Products ... 57
Electronic Products ... 34, 59, 80*
Electronic Servicing ... 25*
Elevators ... 5*, 30, 88, 98, 116
Engineering ... 80*
ENGINES ... 13*, 47, 52
Engraving ... 81
Extinguishing ... 2, 27, 39, 43, 44*, 98*, 103*, 105*

F
FABRICS ... 80
Fans ... 11, 13, 38*, 63, 71, 72, 87, 93, 98
Fastenings ... 2*, 9, 12, 15*, 16*, 18*, 18, 22, 36, 42, 49, 66, 70, 73*, 74, 79, 80*, 87, 91, 101, 103, 107
Feeding ... 9, 18, 47
Felt ... 78
Fence ... 19, 64
Filing ... 34*, 57
FILTERING
Air ... 4
Liquid ... 7, 112
First Aid ... 60*, 109
Flexible Shaft Equipment ... 57, 86
Floats ... 94
Floors ... 3, 5, 7, 31, 49, 72*, 74, 80*, 111, 115, 116
FURNACES ... 78, 84, 113
Furniture ... 12*, 24, 80*
Fuses ... 17, 22, 91

G
GAGES
Dimensional ... 24, 28, 38, 65*, 66, 68*, 72, 101*, 104*
Flow ... 56*
Pressure ... 52*, 80*, 98, 113
Vacuum ... 87*
Gallium ... 2*
Gaskets ... 80, 100
Gears ... 22
GENERATORS
Electric ... 88*, 84
Steam ... 54, 60, 75*, 81, 95*, 96
Glass ... 80*
GLOVES ... 15, 27, 60, 73
Reconditioning ... 45*, 58
Goggles ... 14
Grabs ... 108
Grating, Floor ... 7
GRINDING
Machines ... 29, 36, 39, 57, 88*, 86, 104*, 116
Materials ... 111
Tools ... 47*, 78, 92, 97
Wheels ... 13, 44, 109*
Guards, Lamp ... 30
Guides, Band Saw ... 10, 26

H
Hammers ... 10, 12, 57, 94
Handling ... 4, 8, 14, 16, 19, 20, 24, 27, 31, 41, 48, 49*, 58, 59, 72, 79, 82, 83*, 100
HEADS
Drill ... 47, 69, 81
Tank ... 44
Tapping ... 81
Heat Exchanging ... 14, 33
Heat Treating ... 30, 74, 82*, 90, 113
HEATING
Boiler ... 54, 55, 106
Elements ... 5, 11, 28, 33, 82, 114, 115
Flame ... 75
High Frequency ... 73
Liquid ... 19*
Process ... 17*
Space ... 7*, 26, 71, 80, 105
Helmets ... 14
Hoists ... 13*, 22*, 31*, 48, 53, 60, 61, 43, 82*
Holders, Tool ... 80
Hosing ... 91, 95*
Hoppers ... 9
HOSE ... 33, 82*, 103, 118*
Fittings ... 4, 17, 33, 54, 65, 74, 114
Metal ... 43, 62, 94
Humidifying ... 95

BREVITY—Identify by IEN - 4301 if you write the maker

HANSEN HOSE CLAMP

2 WAY GRIP RE-USABLE . . .

Easy to install, easy to remove for hose renewal. May be used over and over again. Ferrule with special internal left-hand thread holds outside of hose—right-hand stem thread locks inside. Long stem prevents cutting hose. Available for hose 5/16" to 3/4" I.D. with male or female pipe threads, or with swivel nut. All parts machined from solid brass rod.

Write for catalog showing complete line of one-way shut-off, two-way shut-off and straight-through quick-connective couplings—also sand blast cleaners and air spray cleaners.

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 4302 if you write the maker

TAKE IT ANYWHERE!

BECKER
Self-Contained
SPRAY GUN
PRESSURE-POWERED
with
INEXPENSIVE
CO2
CARTRIDGE

ONLY $15.95 with three cartridges

This completely portable spray gun is saving money in many industrial uses. Excellent for maintenance operations. Requires no compressor, motor, or electrical outlet. Heavy-gauge, chrome-plated steel container; cast aluminum head; brass and stainless steel inserts. Low cost CO_2 cartridge sprays up to 21 liquid ounces, depending on viscosity. Use it for paint, varnish, enamel, oil, fireproofing, rust-proofing, disinfecting. If your industrial distributor can't furnish, order direct and we will ship postpaid. (Extra CO_2 cartridges 10 for $1, postpaid, or buy them from your local dealer.)

SULLIVAN BECKER CO., DEPT. 191-D, Kenosha, Wis.

BREVITY—Identify by IEN - 4303 if you write the maker

Tag YOUR Product With This 5-YEAR GUARANTEE

Whether you make hamburger grills or drying machinery — glass annealers or resin kettles — space heaters or melting pots — you can now back them up with a Five-Year Guarantee if you use TRENT "FOLDED-and-FORMED" Heating Elements.

Here's the way to make your product fulfill its promise of faithful performance, by guaranteeing 5 years of sustained, failure-proof heating efficiency. Guarantee covers temperatures to 750° or 1350° F.

New STANDARD RACKS

Standard "FOLDED-and-FORMED" racks, 12" x 12" or multiples thereof, easily installed, horizontally or vertically, to give 1.5 KW to 300 KW. Drilled for mounting. Write for complete information.

TRENT INC
Electrically Heated Industrial Equipment
747 LEVERINGTON AVE PHILA 27 PA

AND SERVICES IN THIS ISSUE

APRIL 1951

I

Impregnating 89
Indexing 55*, 71*
Indicators, Temperature 39
Inks 17
INSULATING
Insulating, Electric 40
Thermal 2, 10*, 26, 82*
Interlocks 71
Isolating, Vibration 12, 89*, 94

J

Jacks 2, 37, 43, 82*
JOINTS
Pipe 10, 62, 115
Shaft 57, 63

K

Keys 127

L

Labels 4, 14, 93, 108
Ladders 18*, 45, 70, 113
Lamps 96
Lapping 33, 56
LATHES 26*
Tools 28, 74*, 111*
Lighting 10*, 30, 33*, 54, 57*, 64*, 66, 67*, 69*, 74*, 82*, 89, 94*, 96
Lights, Indicator 30
Loading 4
Locknuts 101
Locks 51, 72
Lockwashers 42
LUBRICATING
Equipment 9, 18, 58*, 65, 71, 98*
Materials 3, 26*, 75*
Lumber, Treated 38

M

Magnesium 102*
Magnets 87*
Magnifying 82*
Management 26*, 94*
Manufacturing 92*, 104*
MARKING
Machines 102
Materials 4, 14, 17, 64, 84, 93, 106
Tools 7, 54*, 59, 112
Masking 43
Masks 55
Mats 72*
Melting 31, 66*

METALS
Coating 63
Design Strengthened 2
Parts 23, 45, 55, 70, 78, 93
Perforated 58
Spraying 27
Thermostatic 79
METERS
Air Velocity 58
Electric 14, 34, 54*, 82*, 83
Liquid 46, 103
Milling 21, 31, 34*, 81, 108*
Mirrors 1*, 36
Mixing 39, 38*, 82*, 101, 106, 107*
Molybdenum 4
Monorail 6, 14, 57, 107, 116
MOTORS 2*, 26*, 28, 41*, 47, 65, 84*, 101*, 106*, 107, 108*
Control 12, 111*

N

Nails 74
Nameplates 58, 82
New Products 94*
Nibbling 36, 101
Nickel Alloys 3
NOZZLES 7, 23, 43
Nut Driving 9
Nuts 18*, 42

O

Oscilloscopes 61*, 86
Ovens 30, 75, 90

P

PACKAGING
Containers 28*
Equipment 11, 18, 35, 37*, 84*
Materials 13, 37, 49, 69, 73
Service 9*
Packings 46*, 98, 99, 103
PAINTING
Equipment 1*, 12*, 31*, 80, 112, 114
Materials 21*, 36*, 56*, 67*, 106
Papers 13, 73
Patents 28*
Pencils 83
Photographing 3*, 61, 103*
PIPE 66, 84*
Coils 115
Fittings 10, 32, 61*, 62, 63, 84*, 116
Piston Rings 84*
PLASTICS
Fabricating 29*, 58, 71*, 82

PLASTICS (Continued)
Materials 39*, 43*, 48, 52, 53, 54, 83*, 84, 95, 105
Molding 37, 84*
Products 8, 69*, 108, 113*
Plates, Floor 31, 69
Plating 25, 63
Plywood 82, 100, 103
Polishing 15*, 16, 30, 35
Porcelain Enamel 82
Porcelain Parts 84*
Power Units, Hydraulic 104
PRESSES
Attachments 18, 84*
Hand 40
Hydraulic 103
Mechanical 17*, 47
Pneumatic 64*, 69
Tools 5, 10, 84*, 86*, 112
PRINTING
Equipment 12, 29, 70, 78, 86*, 90, 107
Materials 12, 73, 107
Procurement 28*
Protecting 8*, 14, 15, 17, 27, 40*, 55, 58, 60, 69*, 73, 76, 108
Pulling 44, 52*, 105
Pulverizing 100
PUMPS
Centrifugal 12, 13, 16, 24, 48, 51*, 53*, 60, 62, 68, 75, 110
Condensate 106
Hand 107*
Hydraulic 11, 35*, 51, 60, 63, 104
Pneumatic 92
Reciprocating 47, 62, 66*, 86*
Rotary 14, 29*, 45, 52, 62*, 62, 86*, 114
Vacuum 20, 42, 63
Punching 5, 112
PYROMETERS 11*, 50
Supplies 102

R

Racks 20, 41, 113*
Rail Clamps 6
Reaming 31, 54*
Recorders, Production 46
Recording Instruments 40, 60*
RECTIFIERS 55, 107
Reducers, Speed 9, 13, 27*, 73, 104
Reeling 48
Refractories 26
Refrigerating 68*, 79*, 86*, 99*
REGISTER, MANUFACTURERS' 58*
Relays 23, 25, 35*, 49, 97, 99*
Resistors 11
Respirators 17, 27, 76
Retrieving 8, 54, 64*
Rheostats 69
Rings, Retaining 79
RIVETING 12
Rivets 12, 36, 42, 73*, 74, 87
Rock Drilling 49, 89*, 93*
Rolls, Machine 29, 91
Rope 28*, 86
Rubber Products 15, 19, 50, 73, 90, 108

S

Sanding 33, 39, 49*, 76
SAWING
Attachments 30*
Blades 57, 103, 109, 112
Machines 22, 32, 59*, 76, 90, 97
Machine Parts 10, 26
Tools 11*, 30*, 37*, 88, 92*, 101
Scaffolds 84, 86*, 113
Screening 3, 99
Screw Driving 9, 43
Screw Machine Parts 63
Screws 9, 15*, 22, 36, 42, 49, 66, 70, 74, 103
SEALING 11, 12, 34, 46*, 71*, 80, 89, 98, 99, 100, 103, 111
Separating 14, 15, 70*, 77, 101, 104, 116
Sewing 35
Shafts, Flexible 16
Shaping 3, 110
Shearing 49, 86*, 90, 95, 101, 109*
SHEAVES 53
Shipping Containers 30
Shovels 48*, 83*
Shredding 37
Signaling 22*, 30, 72*, 87, 97*
Signs 53
SKIDS 8, 16, 24, 72
Slip Proofing 62*
Slitting 90, 95, 113
Soldering 21, 33, 37, 64*, 73*, 105
Solenoids 5, 83
Solvents 64
Spatter Proofing 59
SPINNING 63*
Spraying 7, 23, 27, 86*, 112, 114
Spreading 33*, 105
Springs 26, 86*
Sprockets 35, 36, 102
Stampings 36, 52*, 66
Stapling 33, 41*, 75, 84, 86*, 92, 111
Starters, Fluorescent 89
STEELS 6, 19, 30*, 59, 86*, 92, 107, 114

Stokers 55
Storing 17, 20*, 20, 46, 50, 55, 71, 74*, 88*, 97, 113*
Straightening 101
Strainers 6, 22, 56, 80
Strapping 30*, 43, 56, 75, 92
Striping 102
STROBOSCOPES 23, 53*
Studs 16*
Stud Driving 38, 88*
Sweeping 110
Switches 15, 38, 41, 42*, 46*, 48, 78, 83, 96*, 98*, 102, 107*

T

Tablets, Salt 76
Tachometers 31*, 114
Tackers 75, 84, 111
Tanks, Steel 17, 55
Tapes 29*, 37, 40, 43, 64, 95
Tapping 78, 81, 102
TESTING
Density 16*
Electric 14, 23, 56*, 88*, 89*
Electronic 5, 10*, 36*, 40*, 61*, 86
Flow 36
Gas 112
Hardness 11, 58*, 85*
Laboratory 38*
Magnetic 39*
Paint 88*
Particle Size 110*
Performance 62*
Radioactive 88*
Shock 91*
Strain 97*, 106
Torque 61*, 81*
Ultraviolet 69*
Thermometers 29*, 40, 88*, 93, 111
Thermostats 16, 68, 87
Threading 51, 78, 81, 87, 88*, 89, 102
Timing 25, 41, 42, 112*
Tires 20, 86
Tissues, Wiping 99
TORCHES 75
Trailers 33, 40*
Tramroll 6, 14, 57, 107, 116
Transformers 10, 37, 44*, 46, 55, 70, 99
Traps 4, 32*, 42, 56
TRUCKS
Attachments 44
Hand 8, 15*, 16, 20, 24, 32, 60*, 63*, 82
Power 9*, 22
Power Lift 8, 25, 32, 42*, 44, 85*, 88*, 88, 89, 92, 100*, 102
Trailer 23, 40*
TUBES 10, 32*, 34, 40, 88*
Finned 14
Fittings 88*, 108
Flexible 43, 62, 94, 113*
Tumbling 30, 89*, 101
Typewriters 78

U

Unions, Pipe 32

V

VALVES
Blowoff 91
Line 6*, 22*, 27, 28, 64, 81, 88*, 88, 90*, 100, 109, 111*
Operating 44, 87*, 95, 102*, 115
Power Operated 21, 34, 53, 62, 67, 84, 91
Regulating 9, 29, 32*, 44, 61, 67, 90*, 100*, 106
Relief 36
Repair Parts 106
Vent 99
Vaporizing 115
Ventilating 11, 13, 21, 32*, 38*, 62, 63, 71, 72, 87, 99*, 93, 98, 103, 112*
Vibrating 14, 18, 53
Viscometers 58
Vises 21, 41, 49, 50, 85, 91*, 94

W

Wadding 49
Washers 18, 49
Washrooms 35, 68
Water Treating 6*, 14*, 38, 57*, 90*, 104
Weighing 18, 79, 90*
WELDING
Arc 5*, 39*, 90
Controls 89*
Lens 69*
Materials 18*, 59, 90*
Positioners 58, 82
Resistance 56
Wheels 8, 20, 26, 35, 108
Winding 8*, 90
WIRE
Cloth 71
Cloth Parts 46, 77
Parts 26
Rope Fittings 30, 88, 97
Rope Slings 79
Wood Treating 90*
Wood Working 32, 59*, 76, 88, 90*, 90
Wrenches 15, 63, 64, 66, 67*, 72*, 81

▼ BREVITY—Identify by IEN - 4304 If you write the maker ▼

20% Faster Cooking !!

FAMOUS KOOK-MORE-KOILS

Faster heating and evaporation — at less cost with Langsenkamp Kook-More-Koils. Eliminate steam waste, product contamination, and loss of essential B. T. U.'s.

One standard set of Kook-More-Koils, operating at 125 lbs. steam gauge pressure raises 10,000 gal. water from 60 degrees F. to 212 degrees F. per hour! Same set will evaporate 1500 gallons of water per hour under the same conditions.

Coils are three complete rounds high, each round having separate condensate return. Fresh steam circulates rapidly through each of the three coils.

Coils can be obtained in any desired metal, will operate at pressure up to 150 p.s.i.

Write today for full information to

F. H. LANGSENKAMP COMPANY
227-235 East South Street, Indianapolis 25, Indiana

▼ BREVITY—Identify by IEN - 4305 If you write the maker ▼
A NEWS ADVERTISEMENT BY THE SCHATZ MANUFACTURING CO.

New Type "AA" Ball Bearings to Replace Precision Bearings at Lower Cost

Schatz Type AA "Commercial" Ball bearings are designed to replace precision bearings, yet give complete anti-friction performance within their operational limits—at 2/3 to 1/6 the cost of precision bearings.

Made for speeds up to 2500 R.P.M. combined with light loads, as in vacuum cleaners, kitchen mixers, etc., these bearings are held to very close bore and O.D. tolerances. Smoothly finished race rings are carburized, hardened and tempered. Outer case of outer ring is drawn from flat, unhardened steel.

"Construction and Characteristics of low-cost Ball Bearings" tells how "Commercials" can cut anti-friction costs up to 85% without sacrificing efficiency. Standard bearings are discussed as well as Special Ball Bearings designed by Schatz for individual requirements, often at no greater cost than standard bearings. This technical booklet and Catalog No. 11, which gives detailed specifications of the complete Schatz "Commercial" line, are available on request.

THE SCHATZ MANUFACTURING CO.
6750 Fairview Ave., Poughkeepsie, N. Y.

▼ BREVITY—Identify by IEN - 4306 If you write the maker ▼

PRODUCTION INSURANCE against GAS CURTAILMENT

ASSURED with VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U.'s per hour.

Write for complete details on the advantages of firing with Vapofier.

VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

▼ BREVITY—Identify by IEN - 4307 If you write the maker ▼

5 BODY STYLES + SPRING RETURN or NO SPRING RETURN + 5 PIPE SIZES + 10 CONTROL ASSEMBLIES + NUMEROUS VARIATIONS = Thousands Upon Thousands of VALVAIR AIR CONTROL COMBINATIONS

Three body styles complete a line of 2-way, 3-way, and 4-way open-end exhaust, 3-way piped exhaust and 4-way piped exhaust valves, plus many methods of actuating, plus almost countless variations. Ends of all bodies in respective sizes are identical, permitting incorporation of any desired control assembly; internally, parts are interchangeable. Important features: leak-proof "O-U" packers (no metal seats); standard pipe area through valve permits unrestricted air flow and minimizes pressure loss. For controlling air, water or oil pressures up to 175 p.s.i.; temperatures up to 120° F. Sizes ¼", ⅜", ½", ¾", 1".

Write for Bulletin #Q

VALVAIR CORPORATION • 454 Morgan Avenue, Akron 11, Ohio
AFFILIATE: SINCLAIR-COLLINS VALVE CO.

Rely Upon Valvair

▼ BREVITY—Identify by IEN - 4308 If you write the maker ▼

eye-opener

JOHNSON Rotary Pressure JOINTS

The Johnson Joint has solved many design and production problems as nothing else can. And the Type L, shown above, is helping to fit it into more applications all the time. It has lugs cast on body to permit simple rod support, an arrangement that both simplifies installation and assures proper alignment. Completely packless, self-lubricating and self-adjusting, the Type L Johnson Joint is used on calenders, dryers, mills, etc. — wherever steam or liquids must be admitted to rotating machine parts.

Write for new catalog

The Johnson Corporation
846 Wood St., Three Rivers, Mich.

▼ BREVITY—Identify by IEN - 4309 If you write the maker ▼

STONHARD SURFACED FLOORS

are TOUGH and DURABLE

Floors disintegrated by water, grease, corrosive liquids or rutted by heavy trucking, can be quickly patched or completely resurfaced with STONHARD flooring materials, each designed to meet a specific condition.

At a scant thickness of one-half inch, a perfect bond is secured to the existing floor and a wear-resistant surface far superior to a new floor is assured.

You will want our descriptive folder on STONHARD floor surfaces.

STONHARD COMPANY
Building Maintenance Materials Since 1922
102 Stonhard Bldg., 1306 Spring Garden Street, Phila. 23, Penna.

Send data on STONHARD floor surfaces: 102/4/51
Firm
Name
Address
City Zone State

BREVITY—Identify by IEN - 4310 if you write the maker

THIS Stearns type "LP" MAGNETIC SEPARATOR

SAVES FOUR STEERS PER MONTH

Before the installation of this STEARNS Magnetic Separator, this large custom cattle feeding operation lost as many as four head of cattle a month, directly traceable to tramp iron in the feed. Now none are lost as all tramp iron is continuously and automatically removed from the chopped hay. You, too, can purify your product and protect machinery this low-cost economical way.

WRITE TODAY

Stearns MAGNETIC MANUFACTURING CO.
626 S. 28th St., Milwaukee 46, Wis.

BREVITY—Identify by IEN - 4311 if you write the maker

The Safe, Speedy, Efficient Way To Handle FILLED CONTAINERS

THIS ALVEY-FERGUSON Trolley Conveyor with pendant-type carrier hauls filled containers from remote parts of the plant—at the most practical handling speed.

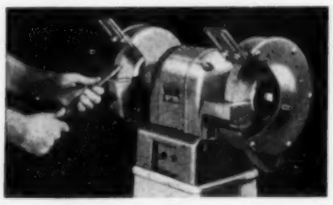
Alvey-Ferguson Engineers have the background of 50 years' experience in designing the best type of conveyor for each materials handling and products handling problem. They can help you increase production and reduce operating expense. Investigate, without obligation, today!

THE ALVEY-FERGUSON CO. 342 DISNEY STREET CINCINNATI 9, OHIO

CONVEYING EQUIPMENT
Alvey-Ferguson
WASHING MACHINES FOR INDUSTRY

BREVITY—Identify by IEN - 4312 if you write the maker

BLACK & DECKER BENCH GRINDERS . . .



Built RIGHT, Priced RIGHT to Fit Your Needs, Speed Your Jobs!

BLACK & DECKER BENCH GRINDERS give you the right tool at the right price, whether you need a Bench Grinder for occasional or continuous use! You have your choice of four models—6" to 10" wheel diam., from $42.00 up—to speed up tool sharpening, grinding, cleaning and buffing. And every B&D Grinder gives you modern design for more working clearance. Dependable B&D-built "constant speed" motors. High-quality parts for longer service. See your nearby B&D Distributor for a demonstration. Write for free catalog to: The Black & Decker Mfg. Co., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker
PORTABLE ELECTRIC TOOLS

"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish I had contact with a manufacturer desiring the services of a mechanical engineer with a successful record in connection with aircraft power plants, controls and superchargers. Age is 30 years. I am at present in New Jersey." **IEN W-27**

ENGINEER . . "I wish I had contact with a company requiring the services of a graduate engineer with experience in engineering, production and selling, particularly in connection with small tools. I am at present in West Virginia." **IEN W-28**

NEW PRODUCT . . "I wish I had contact with a manufacturer interested in taking over production and sale of my patented lawn-mower in which a wire-equipped rotor operates horizontally at high speed to make a clean even cut and to require no sharpening. I am prepared to send complete data and drawings to interested manufacturers." **IEN W-29**

ENGINEER . . "I wish I had contact with a company in need of an individual with broad experience in designing tools and automataic machinery, in factory management, and in plant engineering. My experience is particularly with cold-formed products. I am at present in Indiana and will be available directly to locate anywhere in the United States." available to locate anywhere in the U. S. A." **IEN W-30**

YESTERDAY'S ADVERTISING

"Way back when . . " might be the title of the display assembled in the Nettleton Industrial Museum in Guilford, Conn., of early advertising material. Very possibly your own company will be represented there if it was in business in the old days. Possibly also you could use some of the examples if you are compiling a historical record or are considering one.

Examples of your selection are available and will be sent for your examination on advice to the Museum of the specific subjects in which you are interested. You agree to return the items you do not want and to pay for those you decide to keep against prices quoted by the Museum. Address Walter Nettleton, Manager, at the address above.

ARE WE ADDRESSING YOU CORRECTLY?

You can verify this for us if you will check your address as stenciled on the return postcard stapled to this issue. Just OK it and mail it back if correct, or note on it any needed changes to make sure you will continue to receive the paper each month.

If you do not find a postcard enclosed, watch for it next month as we are mailing them in rotation, state by state.

You can help us considerably in our classification work if you will also take time to check the information against the little boxes at the bottom of the card.

Thanks for your assistance!

BREVITY—Identify by IEN - 4313 if you write the maker

LYON-Raymond's Portable HYDRAULIC ELEVATING TABLE

Here's the most versatile elevating table ever built; it's LYON-Raymond's Hydraulic Elevating Table. No other table has so many practical positioning and handling uses, or saves so much effort and time!

It's ideal for die handling, sheet feeding, machine work positioning, supporting overhanging work, loading and unloading motor trucks, and many other uses. Convenient foot-pedal operation frees operator's hands. Floor lock holds table securely in place. Elevates from 28" to 44" — has sturdy 30" square top. Capacity: 2000 lbs.

FREE BULLETIN Bulletin 231 gives complete details. Send for it today

LYON-Raymond Corporation
Skid and Pallet Lifts • Hydraulic Elevating Equipment
Electric Power Trucks • Positioning • Steel & Die Handling
3540 Madison St., Greene, N.Y.

BREVITY—Identify by IEN - 4314 if you write the maker

AUTOMATIC HYDROMETER

Continuously Records Densities!

Here's an invaluable aid to operating efficiency in paper, food and chemical plants! The Foxboro Liquid Density Recorder furnishes continuous, accurate records of density in flowing liquids. May be calibrated in specific gravity or any customary scale. Automatic Recording Controllers also are available.

Both instruments are for permanent installation. Function without operator's attention. Accuracy is unaffected by foam. Open records easily read to small unit values.

Write for detailed Bulletin A-264. The Foxboro Company, 424 Neponset Avenue, Foxboro, Mass., U. S. A. Branches in principal cities of U. S. and Canada.

FOXBORO Reg. U.S. Pat. Off. DENSITY RECORDERS

BREVITY—Identify by IEN - 4315 if you write the maker

Important Facts about VERSATOL-GEOPRENE* Power and Control Cable In this FREE BOOKLET

Here, in a big new booklet, you'll find interesting and useful information about G-E Versatol-Geoprene general-purpose cable. This booklet, with selection data and suggested applications, will come in handy when you need any of the following types of cable:—

Power Cable • Lighting Cable • Control Cable

for installations in raceways, direct burial in the ground, or in open air.

This nonmetallic rubber-type cable has GR-S (Buna-S) insulation and a neoprene-compound jacket. It is resistant to moisture, heat, aging, sunlight, oils, soil acids and alkalies, abrasion, and flame. It is economical to install, has excellent electric characteristics, and lasts a long time.

To get your copy of this 12-page booklet, without charge, write Section W62-442, Construction Materials Department, General Electric Company, Bridgeport 2, Conn.

*Registered Trade Mark of General Electric Company.

GENERAL ELECTRIC

BREVITY—Identify by IEN - 4316 if you write the maker

NEW FLOORS IN 24 HOURS

FLOORS LAID TODAY • READY FOR USE IN 24 HOURS

Install "PERMAFLEX" HARD MASTIC any thickness required over Old Rough Concrete or Wood Floors, Aisles, Platforms, Walks or Drives. INTERIOR OR EXTERIOR. Edges are splayed to a feather edge.

3000 LBS. PRESSURE PER SQ. IN. WILL NOT RUT

No Dust • No Chipping • No Delays to Production

WE CONTRACT FOR COMPLETE INSTALLATIONS

Prices Are Amazingly Low

OVER 2,000 SATISFIED USERS INCLUDE: General Electric—Westinghouse—U. S. Steel—General Motors—Chrysler—Atlantic Steel—A. O. Smith—Leading R. R. and Warehouse Companies

PERMAFLEX FLOORS ARE

• Heavy Duty • Slipproof • Fire Resistant • Warm & Quiet • Dustproof • Waterproof • Non Tiring • Sanitary

Your men install for 15c PER SQ. FT. for all labor and material

PERMAFLEX PRODUCTS COMPANY
1846 N. Front Street Philadelphia 22, Pa.

BRANCHES:—
Atlanta, Ga., Main 4110 — New York, Wis. 7-5474
Chicago, Blue Isl. 4720R — Pittsburgh, Hub. 1-4000
Cleveland, Blvd. 2-1201 — St. Louis, Lucas 3700
Detroit, Woodward 1-3946 — San Fran., Gar. 1-3196